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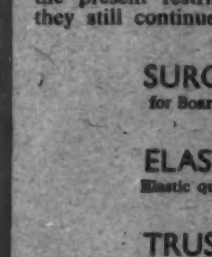

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 20 1947

HAEMATEMESIS AND MELAENA*

WITH SPECIAL REFERENCE TO BLEEDING PEPTIC ULCER

BY

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Haematemesis and melaena have been the cause of much controversy throughout this century. The dangers and advantages of morphine, blood transfusion, early feeding, and surgery have stirred the leaders of the medical and surgical professions to vigorous debate. Diametrically opposed views have continued to flourish and have been nurtured by inadequate and misleading statistics. In the past twelve years two major changes have occurred in the management of haematemesis and melaena. Marriott and Kekwick (1935) introduced the technique of drip blood transfusion, and Meulengracht (1935) focused the attention of the medical world on the value of early and liberal feeding.

Errors in Statistics

A knowledge of the fallacies of the statistics of haematemesis and melaena may help to explain the controversies of recent years concerning mortality and treatment. Errors may arise from the method of collection of the figures, from their mode of presentation, or from intrinsic variation between different series. The literature on haematemesis contains three types of series: mass hospital statistics, individual or personal series, and collected series. Mass hospital figures form the numerical bulk of mortality statistics. Their significance must depend on the accuracy of the final diagnosis recorded on the notes and on the method of compiling the annual statistical tables. Physicians vary greatly in the attention they give to the accuracy of the final diagnosis. A common error is the omission of the complication, and "gastric" or "duodenal" ulcer is recorded without reference to the haemorrhage which led to the admission of the patient.

Individual series are the only reliable sources for information. The personal attention to detail by an interested physician and the careful recording of the diagnosis probably explain the lower mortality in such series compared with contemporary mass statistics. One fallacy does exist: there is a tendency to publish a small series of 20 to 30 personal cases, illustrating a particular form of treatment. There is certainly a bias towards publishing successful rather than unsuccessful results, and the chance of halving a mortality in a short sequence of cases is appreciable.

Collected series of statistics are highly fallacious. There is a tendency to include groups of cases with different criteria of diagnosis. Many series exclude cases of melaena; others exclude cases with no radiological proof of ulcer. Rasberry and Miller (1943) include 24 papers concerning fewer than 40 patients out of a collected series of 33 papers. To bring together this number of short series is to accentuate greatly the possibly misleading influence of successful short sequences. The mode of presentation of figures is the source of much confusion in the literature on haematemesis and melaena. A great difficulty in the evaluation of many papers is the failure to state the criteria of diagnosis of bleeding, the criteria for diagnosing peptic ulcer, and the basis for excluding cases diagnosed as carcinoma.

It is particularly unfortunate that the majority of writers exclude so many of their fatal cases, and their figures are quoted and requoted without any reference to the major amputation which occurred in the original paper. It has been the rule to exclude deaths with associated heart failure, pyelonephritis, acute perforation, cellulitis of the arm, parotitis, etc. Such complications may be iatrogenic and should not be excluded. Only two exclusions would seem justifiable: first, when the patient dies from a clearly unrelated disease (for example, tuberculosis); secondly, if an individual, having recovered from his haemorrhage, undergoes an elective operation and dies, his death should not be attributed to the initial bleeding.

Another source of error is the exclusion of surgical cases. It is customary for cases of haematemesis and melaena to be admitted to medical wards, and in few, if any, hospitals can admissions be made at random to both medical and surgical wards. When operation has been advised the patients have been transferred to the surgical wards. Nevertheless, many writers have excluded their surgical transfers and the surgical deaths. Thus, Crohn (1927) excluded seven surgical cases (with five fatalities) in a series of 101 haemorrhages, and his published mortality is 4%. This gives an entirely erroneous impression of the prognosis of bleeding when quoted by later writers. A fallacy common in the early part of this century was to relate the number of deaths from haemorrhage to the total number of patients admitted with peptic ulcer. Hawkins's (1907) mortality of 0.7% was calculated on a total of 556 patients admitted with peptic ulcer, but the number with frank bleeding is not stated.

The third great source of error in the literature of gastro-duodenal bleeding arises from the intrinsic variation of different series. There are four major variables to be considered—age, sex, type and position of lesion, and social status. The mortality of haematemesis and melaena from peptic ulcer rises after the age of 45 and is negligible before that age (Goldman, 1936). The mortality may be lower in women than in men. Acute gastric ulcers are much less serious than indurated penetrating lesions. Chronic duo-

*The first of the two Goulstonian Lectures delivered at the Royal College of Physicians on March 18 and 20, 1947.

denal ulcers may be less serious than chronic gastric ulcers. The nutritional status may be better in private patients than in the labouring classes.

The age distribution may vary enormously (Table VI) and render useless the direct comparison of final mortality rates. Intrinsic variation in series is particularly apt to occur between private series, voluntary hospital series, and municipal hospital figures. There is an increase in the gastric/duodenal ulcer ratio with descent in the social scale (Morris and Titmuss, 1944), and there is no doubt that the age distribution is appreciably higher in municipal than in voluntary hospitals. There is a strong bias on the part of the general practitioner to send the old, decrepit, ill-cared-for, ill-nourished man to the local municipal hospital, where admission is a statutory obligation and therefore certain, rather than to a voluntary hospital, where a strong bias may be exercised by the junior staff against the admission of old and possibly chronic cases.

Comparison of figures from different countries introduces a possible error. Geographical variations in the ratio of acute and chronic gastric ulcer and in the gastric/duodenal ratio probably exist. The ease of admission to hospital under different medical services may influence the proportion of mild cases treated at home and therefore excluded from hospital statistics.

British Figures

In spite of the many fallacies of medical statistics and the possible inaccuracy of individual series, a trend in mortality is clearly seen when reviewing the major British papers. In the early part of the century the mortality of haematemesis and melaena from ulcer was considered to be under 5% (Paterson, 1924). The frequently quoted figure of 2.5% from Guy's Hospital (1911–20) given by Hurst (1924) refers to an analysis of the post-mortem figures, excluding surgical fatalities, corrected for necropsies not performed and related to an approximate number of admissions. The corrected figure of 4% does indicate the low mortality at this time.

An increase began probably about 1917 (Bulmer, 1932), reached a maximum of about 20% between 1925 and 1935, and during the past decade has declined to between 5 and 10% (Table I and Fig. 1). The increase in mortality was

TABLE I.—*Mortality from Haematemesis due to Peptic Ulcer*

Key for Fig. 1	Name	Period	Cases of P.U.	Mortality (Corrected to conform with same criteria as present series)
C	Conybeare, quoted by Hurst (1924)	1911–20	Approx. 600	4%
B	Bulmer (1927)	1902–9	136	7%
B_2	"	1910–17	179	7%
B_3	"	1918–25	145	15%
B_4	Bulmer (1932)	1926–31	111	16%
Ch	Chiesman (1932) ..	1925–31	191	25%
C & P	Cullinan and Price (1932)	1925–9	105	18%
B & H	Burger and Hartfall (1934)	1921–30	137	21%
H	Hellier (1934)	1926–32	284	14%
A	Aitkin (1934)	1929–33	262	13%
H & B	Babey and Hurst (1936)	1919–35	82	7%
S	Smith (1945)	1934–45	180	6%
A J	Present series	1940–7	615	8%

undoubtedly associated with two changes in the character of peptic ulcer. In the early part of this century acute ulcer causing bleeding was prevalent among women but carried a very low mortality (Bolton, 1913). The Registrar-General's mortality figures have demonstrated the virtual disappearance of this group of peptic ulcer in young women (Jennings, 1940; Tidy, 1944).

Although the loss of these cases of acute ulcer would increase the absolute mortality rate, this was not the complete story, and from 1920 to 1930 a further change occurred in peptic ulcer. A twofold to threefold increase became apparent in the Registrar-General's figures, the increase being due to ulcers, particularly duodenal, in men over 40 (Tidy, 1944). That this increase is real and not due to improved diagnosis or increased surgical intervention is revealed by the statistics on acute perforation from Glasgow,

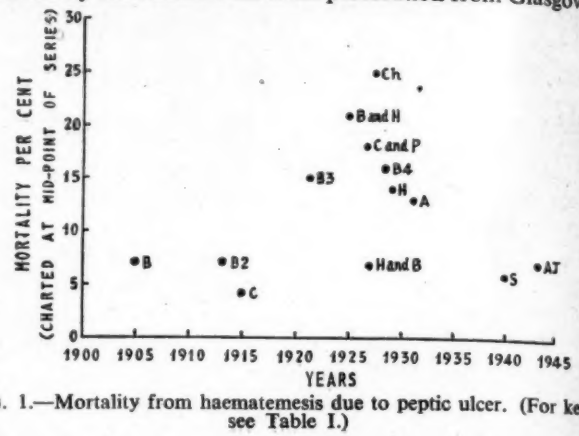

FIG. 1.—Mortality from haematemesis due to peptic ulcer. (For key, see Table I.)

which show a corresponding increase (Illingworth, Scott, and Jamieson, 1944). These changes are well reflected in the papers on haematemesis and melaena. The important mortality is in men over 40, and the lowest in women under 40. An analysis of papers from this country has shown that a remarkable increase occurred about 1920 onwards in the proportion of men over 40 and also in a marked decline in the younger women (Table II and Fig. 2).

TABLE II

Author	Males over 40		Females under 40	
	Incidence	Mortality	Incidence	Mortality
Bulmer (1902–25)	17%	24%	46%	6%
Bulmer (1926–31) and Cullinan (1925–9)	50%	20%	11%	11%
Smith (1934–45)	40%	16%	11%	5%
Avery Jones (1940–7)	51%	10%	5%	4%

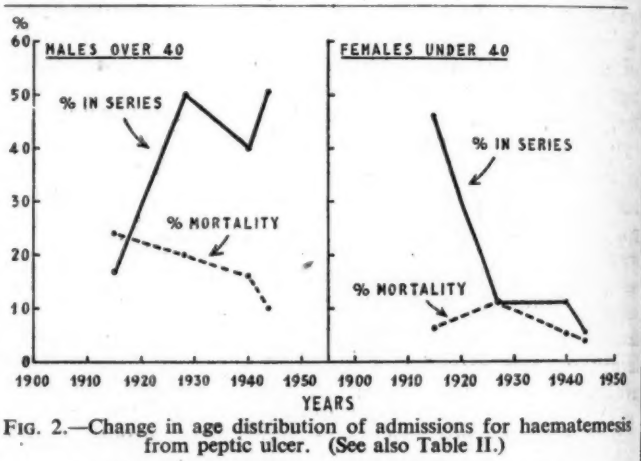

FIG. 2.—Change in age distribution of admissions for haematemesis from peptic ulcer. (See also Table II.)

The actual mortality rate for men over 40 has declined, but nevertheless the proportional increase was so great that the total mortality rose and reached very high levels in 1930. The fall in mortality in the past decade is undoubtedly due to the introduction of liberal feeding (therefore adequate fluids) and to the use of the drip blood transfusion of Marriott and Kekwick.

The controversy on haematemesis in past years was accentuated by Hurst and Ryle's (1937) contention during the 1930 period that the mortality was extremely low. Between 1919 and 1935 Hurst treated 82 cases of bleeding peptic ulcer in his wards at Guy's Hospital, and seven died. He excluded three cases—two perforated after admission

and one had pyelonephritis. The latter complication developed a month after the haemorrhage and may legitimately be excluded. His corrected mortality of 7% represents a result that could be obtained by an interested physician who avoided the extreme dehydration which contributed to the high level of the mass hospital statistics at that time. Ryle (1937) reported a mortality of 1.6% in 258 patients seen in consulting practice, excluding six complicated fatal cases. It would seem that many of the patients were first seen in his consulting-room after the bleeding episode had resolved, and his cases are therefore entirely different from those seen when admitted to hospital for acute haemorrhage.

No attempt will be made to present a corresponding analysis of the American and Scandinavian series, as there are too many imponderables to allow a critical comparison with the British papers. Figures for the early years of this century do not appear to be accessible in the American and Scandinavian literature, but the recent fall in mortality can readily be discerned. The Scandinavian figures during the 1930 period were never as high as the British and American series, and the fall to 1% (Meulengracht, 1939) has not been reproduced in this country or in America in any series of over 100 cases. It seems probable that admission to hospital is easier in Scandinavian countries, and many more mild cases are therefore included in their series. Only 30% of Meulengracht's cases showed radiological evidence of peptic ulcer, against 60% in this series, suggesting a lower proportion of chronic ulcers than in this country.

Besides the many statistical pitfalls there are semantic difficulties which encumber the literature on haematemesis and melaena. Recurrent bleeding is used by some writers when referring to recurrent episodes of bleeding over the period of years, and by others to mean recurrent bleeding after admission with haemorrhage. Massive bleeding is used by some to mean exceptionally severe haemorrhage and by others to distinguish cases from those with occult blood in the stools. Some writers use "haematemesis" generally to comprise all cases of haemorrhage, including melaena only, while others exclude such cases of melaena. In earlier papers bleeding gastric ulcer often included cases of duodenal or jejunal ulcer. Finally, post-operative cases and melaena may refer to patients who had a gastric operation in the past or to patients immediately after operation.

It is insufficiently realized that a single mortality figure is an exceedingly dangerous symbol. The surgeon may reassure himself and the patient that the mortality of a partial gastrectomy is low, but the extremely small risk in men aged 30–40 is offset by much increased hazard in older age groups. To appreciate the prognosis of bleeding peptic ulcer it is essential to know the risk with different types of lesions and in different age groups. The present series is large enough to enable this information to be readily available.

The Series

The 687 patients are a consecutive series admitted between June, 1940, and January, 1947, inclusive, mainly to the dietetic wards under my care. Patients who had a brisk haemorrhage in hospital while under treatment for some other condition have been included. Patients with dark blood-stained vomit, associated with intestinal obstruction, peritonitis, diabetic coma, blood dyscrasias, etc., were not included. Every patient had had evidence of frank recent haematemesis and/or melaena with good evidence of blood loss. The hospital, being municipal, serves a defined area in N.W. London only, and the admissions are therefore representative of the medical problems of that district. The statistics have not been influenced by problem cases from other parts of London.

The series has been divided into two groups to allow separate consideration of 14 patients who came into hospital with acute perforation of a peptic ulcer and who then bled during the first two weeks after operation. It was felt that the additional hazard of the prior perforation rendered comparison with other groups unreal. These cases of haemorrhage after acute perforation were all treated in the same wards, which are for surgical as well as medical cases of peptic ulcer. The five patients who perforated after admission for bleeding are regarded as having complications of the haemorrhage and are included in the main series.

The patients were treated on the general lines described by Witts (1937). They received an initial purée diet and drip blood transfusions. The aim of transfusion was to try to maintain the haemoglobin at such a level that further bleeding, if it occurred, would not cause severe anoxaemia. Approximately one-third of the patients were transfused; the amounts used are shown in Table III. The lowest haemoglobin readings were below 40% in 28% of the peptic ulcer group.

TABLE III.—*Blood Transfusion*

No. of Bottles (540 ml.)	No. of Cases	No. of Bottles (540 ml.)	No. of Cases
1	47	11	4
2	72	12	1
3	38	13	3
4	22	14	1
5	15	15	1
6	11	16	2
7	3	17	1
8	5	18	2
9	5	20	1
10	2	21	1

Diagnosis.—A detailed history and an examination were recorded in all cases, and a barium meal was given as soon as the patient could get up, usually during the third or fourth week, but sometimes sooner. Gastroscopy was carried out in selected cases between three and ten days after the bleeding had ceased. This examination was made as a clinical investigation into the cause of bleeding. Great care and discretion were exercised and no serious complications occurred. Gastroscopy was performed in 116 out of 217 cases which clinical and radiological investigations failed to diagnose. In 65 cases a rapidly healing gastric ulcer was found. The final diagnoses are listed in Table IV.

TABLE IV.—*Final Diagnosis*

Peptic Ulcer Group	Admissions	Deaths
Chronic G.U. group:		
Chronic G.U. diagnosis established by radiograph, operation, or necropsy	110	24
Chronic G.U. and D.U.	12	—
Chronic D.U. group:		
Duodenal ulcer	190	16
Pyloric ulcer	17	3
Previous G.-E. or P.G. for D.U.	34	1
Acute lesion group:		
Acute gastritis	5	—
"Gastrostaxis" (no lesion discovered at necropsy)	2	2
Acute G.U.	67	2
Other "*x*-ray"-negative cases	143	—
Miscellaneous group:		
Oesophageal ulcer	2	—
Partial thoracic stomach	6	—
Not radiographed	27	—
	615	48
Gastric tumours:		
Simple	4	—
Malignant	18	6
Portal hypertension:		
Banti's syndrome	12	—
Cirrhosis hepatis	11	5
Portal thrombosis	2	2
Other causes	11	1
First series. Total	673	62
Second series	14	6
Haematemesis and melaena after admission for acute perforation of peptic ulcer		
	687	68

The diagnosis of carcinoma of the stomach was confirmed by histology or by the presence of metastases except in two cases where necropsy was performed at the coroner's office and the pathologists reported neoplastic gastric ulcer. A number of causes of massive haemorrhage have not yet been specifically diagnosed in these wards—for example, haemorrhage from localized arteriosclerosis of gastric vessels (Frank, 1946), which may cause repeated episodes of bleeding; hereditary telangiectasia, in which epistaxis is usually a feature of the previous history (Griggs and Baker, 1941); malignant or benign tumours of the oesophagus; multiple polyps of the oesophagus (Dickes *et al.*, 1942); small-intestine innocent tumours; leiomyoma; neurofibroma (Baker and Halley, 1946; Hanno and Mensh, 1944; Dudley, 1934; Klingenstein, 1938), haemangiomatosis, or carcinoma of the small intestine (Segal *et al.*, 1945); rupture of aneurysm of aorta, hepatic artery (Gordon-Taylor, 1943), or splenic artery (Murphy, 1942). The 12 admissions for Banti's syndrome were due to only two patients. The "other causes" included Meckel's diverticulum (2), renal failure (4), spurious haematemesis from pulmonary disease (2), and carcinoma of the pancreas (1).

Age Distribution.—Gastro-duodenal haemorrhage is more often fatal in the elderly, and the age distribution (Table V) must be taken into consideration in comparing

TABLE V.—*Peptic Ulcer Group: Age Distribution*

Age	Males		Females		Total Deaths	Mortality
	No.	Deaths	No.	Deaths		
10–19 ..	3	—	2	—	—	—
20–29 ..	24	1	11	—	1	3%
30–39 ..	63	—	18	1	1	1%
40–49 ..	109	5	37	1	6	4%
50–59 ..	90	6	55	2	8	6%
60–69 ..	81	11	47	5	16	12%
70–79 ..	34	10	28	3	13	21%
80+ ..	7	1	6	2	3	23%
	411	34 (8%)	204	14 (7%)	48 (7·8%)	

these results with other series. The proportion of patients over 60 is considerably higher than in previous series in this country or elsewhere (Table VI). The high proportion

TABLE VI.—*Cases over 60 Years of Age*

Name	Region	Period	No.	No. over 60
Bulmer (1927)	Birmingham	1902–26	460	9 (2%)
Burger and Hartfall (1934)	London	1921–30	137	13 (10%)
Cullinan and Price (1932) ..	,,	1926–30	105	11 (10%)
Kirsner and Palmer (1939)	America	1929–39	230	30 (13%)
Meulengracht (1936) ..	Denmark	1932–6	206	36 (17%)
Clemmesen and Lund (1939)	Norway	1934–8	263	40 (15%)
Scott (1940)	Glasgow	1936–40	110	18 (16%)
Schiff (1944)	America	1937–44	160	34 (21%)
Present series	London	1940–7	615	203 (33%)

(33%) of elderly people in this series has been maintained since the end of the war and cannot be explained by the loss of younger patients into the Forces. Comparison with previous figures is difficult, as there are no pre-war series from municipal hospitals, and the bias towards sending the older and more decrepit patients to these hospitals is probably the cause of the high proportion. The figures nevertheless suggest that the age of the ulcer population may be increasing.

Mortality.—The total mortality of the peptic ulcer group is 7.8%. Under 45 the mortality remains at 2%, then rises to 6% between the ages of 45 and 59, 12% between 60 and 69, and finally 21% over 70.

Fatal Cases

There were 48 fatal cases among 615 patients in the peptic ulcer group, and an analysis of these cases is presented with reference to nature of lesion, presence of complications, recurrent bleeding, and mode of death. Necropsy was carried out in 45 out of the 48 cases.

Bleeding (Table VII) accounted for 34 out of the 48 fatalities, the others being due to acute perforation (5), pulmonary embolus (1), coronary thrombosis (2), and exhaustion (6).

At necropsy it was usual to find one large open vessel in the floor of the ulcer, and it was remarkable that death had occurred usually not quickly but after several recurrent bleedings in the course of as many days. Bleeding with acute collapse must have occurred from the large exposed vessel, not once but perhaps six times. It would seem probable that in most cases bleeding from such a large vessel could have occurred for only a short period, perhaps 10 to 15 minutes, and then ceased. At operation it was more usual to find the vessel beginning to spurt when manipulated than when first seen.

TABLE VII.—*Time of Death from Bleeding*

	No.	Suddenly while in Hospital	Days							
			1	2	3	4	5	6	7	7+
Acute lesion group ..	3	—	1		1		1			
Chronic gastric ulcer group	14	1	2	2	2	2		2	1	2
Duodenal ulcer group ..	17	1	4	3	1	3	1	1		3

The distribution of the ulcer fatalities by diagnosis, age, and sex is set out in Tables VIII and IX, which particularly indicate the prognosis in different age groups. It is apparent that the mortality of chronic gastric ulcer is twice as high as duodenal ulcer. There is, however, one fallacy; the duodenal ulcer group undoubtedly contains many more acute ulcers, whose presence is shown more readily in the constricted space of the duodenal cap than they would be radiologically in the body of the stomach. The mortality of the acute lesions is extremely low.

TABLE VIII.—*Male Fatal Cases*

Age	Chronic G.U. Group		D.U. Group		Acute Group		Misc. Group	
	No.	Deaths	No.	Deaths	No.	Deaths	No.	Deaths
10–19 ..	—	—	2	—	1	—	—	—
20–29 ..	2	1	15	—	4	—	3	—
30–39 ..	12	—	25	—	20	—	6	—
40–49 ..	20	4	57	1	28	—	4	—
50–59 ..	24	4	41	2	24	—	1	—
60–69 ..	21	5	37	6	23	—	—	—
70–79 ..	6	3	14	7	9	—	5	—
80+ ..	—	—	2	1	5	—	—	—
All ages :	85	17	193	17	114	—	19	—
Mortality	20%		9%		—		—	

TABLE IX.—*Female Fatal Cases*

Age	Chronic G.U. Group		D.U. Group		Acute Group		Misc. Group	
	No.	Deaths	No.	Deaths	No.	Deaths	No.	Deaths
10–19 ..	—	—	—	—	2	—	—	—
20–29 ..	3	—	4	—	3	—	1	—
30–39 ..	2	—	5	1	10	—	1	—
40–49 ..	4	1	11	—	21	—	1	—
50–59 ..	9	1	14	—	28	1	4	—
60–69 ..	10	3	8	1	23	1	6	—
70–79 ..	8	2	5	—	13	1	2	—
80+ ..	1	—	1	1	3	1	1	—
All ages ..	37	7	48	3	103	4	16	—
Mortality	19%		6%		4%		—	

The relation of death to brisk recurrent bleeding shows that there is a correlation between death and recurrent bleeding from chronic ulcer but not from acute lesions in which recurrent bleeding is almost as frequent and often as severe (Table X).

TABLE X.—*Brisk Recurrent Bleeding After Admission*

Age	Chr. G.U. Group			D.U. Group			Acute Group			Misc. Group		
	A	B	C	A	B	C	A	B	C	A	B	C
10–19				1								
20–29	1	1		1								
30–39	4			3	1		5			2		
40–49	7	3		6	1		12			1		
50–59	9	4	2	5	2		9			1		
60–69	7	4		8	3	2	11	1				
70–79	3	3		6	4	1	5	1		1		
80+				1			1	1				
	31	15	2	31	11	3	43	3	—	5	—	—
Total No. ..	122			241			217			35		
Proportion with A	26%			13%			20%			14%		
Mortality with A	48%			35%			7%			—		

A = Brisk recurrent bleeding. B = Died. C = Successful operations.

Left ventricular enlargement was found in 10 out of the 45 necropsies and severe arteriosclerosis in 22. Oedema of the lungs was uncommon; massive oedema was present in only one case and terminal oedema of the bases in four. One chronic gastric ulcer was accompanied by an acute ulcer which had developed after laparotomy and simple suture of the bleeding vessel. An exposed vessel was seen in 32 out of the 45 cases and an aneurysmal swelling was noticed four times. The large size of the chronic ulcers was very striking; 75% were over 3 cm. in diameter, the largest being 13 cm.; but in spite of the large size there was no histological evidence of malignancy.

By the bedside the fatal cases could be clearly distinguished as those with a grave clinical complication which would essentially rule out the thought of surgical treatment. Thirty-five of the fatal cases had such complications as being over 75 years (8), severe emaciation (5), generalized oedema (4), cerebral thrombosis, heart failure, pneumonia on admission, gross bronchiectasis, etc. The general condition of the remaining 13 cases was sufficiently reasonable for surgical treatment to be contemplated.

The Role of Surgery

During the first 400 admissions surgery was undertaken as a last desperate measure in three cases, all fatal. It was considered a legitimate clinical observation to try to determine which cases would still have died under modern medical treatment. During this time it became apparent that there was a small group of nine uncomplicated cases in which life might have been saved by timely surgery (Table XI).

TABLE XI.—*Uncomplicated Cases (Medical)*

Sex	Age	Ulcer	Surgical Risk
M.	25	Chronic G.U. (3 × 2 cm.)	Fair
F.	30	,, D.U. (8 × 5 cm.)	,,
M.	47	,, J.U. (2 cm.)	,,
M.	56	,, G.U. (2 cm.)	Good
M.	60	,, G.U.	Fair
M.	61	,, G.U. (6 cm.)	Very poor
M.	70	,, G.U. (1·5 cm.)	Fair
M.	70	,, D.U. (1 cm.)	Poor
M.	72	,, (5 × 3 cm.)	Fair

As a result of the analysis it was decided to undertake an emergency partial gastrectomy on those patients, particularly if over 50, with good clinical evidence of a chronic ulcer who were free from medical complications and who had a brisk recurrent haemorrhage after admission to hospital. Persistence of pain after admission and evidence of arteriosclerosis would be further points in favour of operation. Evidence of chronic ulcer has meant a history of known previous chronic ulceration or recent pain, particularly if severe, lasting more than three weeks. The temptation to lay down a hard-and-fast dividing line should be resisted, as there is so much individual variation, and every case must be considered on its own merits.

In the past the mortality of delayed surgery has been high—for example, Finsterer (1939), 26.9%; Gordon-Taylor (1937), 36%—but a high mortality for delayed operation is not necessarily an argument against it if by waiting one can distinguish a group of patients who carry an exceptionally high mortality with medical treatment. It will be seen from Table X that such a group will carry a mortality of some 50% or more under medical treatment. Surgery, even at a risk of 20 to 30%, may still effect a saving in life. Among the past 267 admissions seven such patients have had an emergency partial gastrectomy performed by Mr. J. D. Fergusson, with one death (Table XII).

TABLE XII

Sex	Age	Diagnosis	Brisk Recurrent Bleeding in Hospital	Day of Operation after Onset of First Haemorrhage	Operation	Result
M.	51	Chr. G.U.	2	2nd	Part. gast.	Recovery
M.	57	Chr. G.U.	2	5th	,,	,,
M.	65	Chr. pyloric ulcer	4	8th	,,	,,
M.*	58	Double chr. G.U.	1	1st	,,	,,
M.	66	Chr. D.U.	3	2nd	,,	,,
M.	70	Chr. G.U.	3	6th	,,	,,
M.	75	Chr. D.U.	1	1st	,,	Died

* This patient belonged to the second series—that is, he bled after admission for acute perforation.

There is therefore a small group of patients with chronic ulcer and brisk recurrent bleeding after admission in whom delayed emergency partial gastrectomy can be successful. Finsterer (1939) achieved a 5% mortality by operating on all cases within 48 hours. With the high age distribution and the frequency of associated medical complications in municipal hospital practice, it is extremely improbable that routine emergency surgery immediately on all admissions would result in a lower total mortality than from medical treatment together with limited surgery as proposed.

The Role of Blood Transfusion

Although most clinicians use drip blood transfusions in the management of gastro-duodenal haemorrhage, there are still some who remain unconvinced of its value. Smith (1945) in a critical survey of 200 cases does not advise transfusion. The arguments for and against will be briefly considered.

The risk of reactions to blood is a real one, and mild rigors, fever, or slight jaundice may follow in a small proportion (under 5%) even when cross-grouped. Again, there is a risk of inducing Rh antibodies in the Rh-negative individual. This may lead to reactions during subsequent transfusions, and women who become sensitized may thereafter be incapable of bearing a live child. Normal pregnancy results in sensitizing about 4% of Rh-negative mothers with Rh-positive husbands. Therapeutic blood transfusions, however, sensitized about half those at risk (Wiener and Gordon, 1947). As 15% of women are Rh-negative, this aspect must be seriously considered when transfusion is contemplated for women during the reproductive period of life.

A blood transfusion may overload the circulation, increase the right auricular pressure, raise the cardiac output, and possibly lead to acute left ventricular failure and oedema of the lungs. Sharpey-Schafer (1945) has demonstrated graphically the embarrassment which may occur in the circulation after transfusion in severely anaemic patients, and has further demonstrated the risks of transfusion in relation to the changes in haemodynamics which follow an acute haemorrhage.

It has been thought that blood transfusion may perpetuate or restart the bleeding, but the incidence of recurrent bleeding has actually fallen since the introduction of drip transfusions and it has not been the experience in this series that they do restart the bleeding. It has been argued that blood transfusion may raise the blood pressure. Drip blood transfusions do not increase the blood pressure more than would occur without transfusion (Avery Jones, 1939a). There does not appear to be any reliable evidence that subsequent haemopoiesis is depressed by transfusion, and the risk of transmitting infective hepatitis, syphilis, or malaria is very small.

Against these arguments are cogent reasons for giving drip blood transfusions. Death from bleeding does not occur quickly in most cases, but follows two, three, four, or more brisk recurrent bleedings in as many days. Therefore there is time to replace lost blood by drip transfusion even if given at the rate of 540 ml. in four hours. If the blood lost is replaced, and if the haemoglobin level is maintained above 40–50%, the patient is in a much better position to withstand further bleeding, should it occur.

If the blood loss is by slow oozing it is quite feasible to keep pace with the bleedings by drip transfusion. If surgery becomes necessary the patient can be maintained at a much safer level than if no transfusions were given. Once the haemoglobin is below 30% there is a risk of anoxaemic manifestations with disorientation, restlessness, particularly at night, and lack of co-operation. Such manifestations may well induce a vicious circle, as the patient becomes intolerant of further transfusion and nursing. Cerebral anoxaemia is particularly serious in elderly patients, and a short period may induce irreversible cellular changes which cause coma and death. Occasionally a severe initial collapse, with great reduction of the circulating blood, may lead directly to a state of profound and persistent oligaemic shock and death, which might have been averted if the restoration of the blood volume had been assisted.

Again, severe anaemia will cause a sharp increase in the output of the heart (Sharpey-Schafer, 1945), and the accompanying high venous pressure may induce cardiac failure and oedema, and in the presence of these phenomena the risk of transfusion will be considerably increased. If the patient becomes severely anaemic he may be considerably distressed from headache, and his intense pallor is an added anxiety for the medical staff and relatives. Lastly, there is the small risk of permanent amaurosis, which may follow recurrent bleeding in an anaemic patient.

The available evidence supports the use of blood transfusion, but a bias in favour of transfusion must be exerted with discretion and not enthusiasm. All possible measures must be taken to minimize the known risks. Women in the reproductive period of life should be Rh-tested; severely anaemic patients should be under constant supervision during the transfusion and a watch kept on the jugular veins (with the patient propped up) and on the pulse rate. Blood should be cross-grouped, and the bottle carefully inspected before use. The same blood group should be employed whenever possible. The experience of this series has shown that blood transfusion is a most valuable therapeutic aid in the management of gastro-duodenal haemorrhage. If it is given as a drip transfusion the patient can often be maintained at such a level of haemoglobin that he is able to withstand any further bleeding without developing anoxaemic manifestations. In view of the work of Sharpey-Schafer it is clearly desirable to maintain the haemoglobin above 40%, and secondary cardiac embarrassment may thereby be avoided. The patient is spared the headache of severe anaemia, and the risk of amaurosis is minimized. The risk of acute cardiac failure from careful transfusion is considerably less than that of leaving the patient's haemoglobin below 40% when bleeding may recur.

Transfusions have been given with the M.R.C. blood transfusion set, and in very few cases has it been necessary to cut down on a vein. Usually 540–1,080 ml. has been transfused in four to eight hours, but on occasion 1,620–3,240 ml. has been given continuously at the same rate. Except in a few collapsed patients, the blood has never been given quickly. One patient died, possibly as the result of the transfusion, but necropsy revealed the presence of coronary infarction. On the other hand, in several patients insufficient transfusion undoubtedly contributed to their death. Minor reactions, slight jaundice, and urticaria have occurred in a very small minority of cases.

[The second lecture, with a list of references, will appear in our next issue.]

GASTRO-ENTERITIS OF UNKNOWN AETIOLOGY

AN OUTBREAK IN A MATERNITY UNIT

BY

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In recent years increasing attention has been paid to a form of gastro-enteritis for which, despite improved methods of laboratory diagnosis, no known cause has been discovered. A number of such outbreaks have been described in this country,[1–10 18 19] the U.S.A.,[11–16 20] and on the Continent.[17 21] The diagnosis depends on the recognition of a distinctive clinical picture differing from bacterial gastro-enteritis, on the presence of an epidemic, and on negative laboratory findings.

These outbreaks, excluding "epidemic diarrhoea of the newborn,"[23 24] can be divided into two categories with rather different symptoms. On the one hand there is the epidemic nausea and vomiting described by Rischel,[17] Miller and Raven,[18] and Bradley,[19] in which diarrhoea is not a predominant symptom; into this group falls, possibly, the less well defined "winter vomiting disease" of American observers.[15 16 20] On the other hand there is a variety in which diarrhoea is the most striking and constant symptom, as exemplified in outbreaks described by Smith and Davies,[1] Brown, Crawford, and Stent[2] in this country, and by Reimann *et al.*[13] and other observers[11 12 14] in the United States.

This paper is concerned with the second type of illness, characterized by diarrhoea of abrupt onset, with frequent watery stools of a yellowish-grey colour without macroscopic blood or pus. Fatal cases have not been reported among adults, but the fatality rate among infants is variable.

Epidemiologically, though most of the outbreaks reported have occurred in selected groups in institutions, both sexes and all age groups are susceptible, the incubation period is short, and the outbreak tends to be of the protracted rather than of the explosive "food-borne" type. The attack rate is often high in semi-closed communities and the disease is particularly troublesome in maternity wards. The outbreaks have a variable seasonal incidence. That described by Smith and Davies[1] was in the autumn

and winter months, but during 1944–6 outbreaks starting during the summer months seem, from a limited number of published reports[1–6] and other sources,[7–9] to have been more common (see Fig. 1).

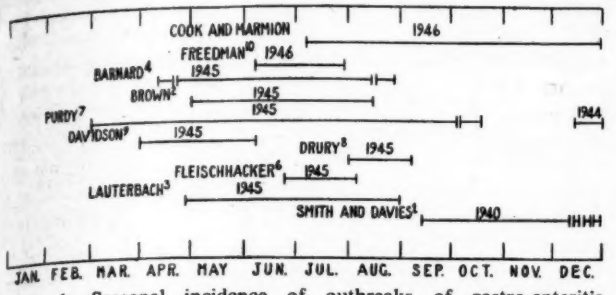

FIG. 1.—Seasonal incidence of outbreaks of gastro-enteritis. ⊢⊣=Period of outbreak. HHH=Exact date not stated.

In the absence of an outbreak the mildness of the disease makes its detection in the general population difficult, for probably many patients do not require medical aid. The replies of general practitioners in the Salford area to the circular of Brown *et al.*[2] suggest that an outbreak of the disease in an institution is a reflection of its increased incidence in the surrounding population. The correspondence,[3–6] following the report of Brown *et al.*,[2] from general practitioners and other doctors living in various, sometimes widely separated, localities indicates that the disease was widespread throughout the country during 1945, and it is probable that it was also prevalent during 1946. The present account deals with an outbreak in an Oxford maternity unit.

The Outbreak

On Aug. 26, 1946, the medical officer of health and the Public Health Laboratory, Oxford, were asked to investigate an outbreak of diarrhoea and vomiting in the maternity section of an Oxford hospital. The hospital is mainly for the care and treatment of the aged and chronic sick, but part of it is used as temporary accommodation for a maternity unit run by the Oxford City health services.

The unit is housed on the first and second floors of one of the buildings and consists of seven rooms containing one to six beds, an admission ward, a nursery, labour ward, kitchen, and lavatory accommodation. The number of beds available in the unit is 26, and the staff consists of five midwives, six assistant nurses, and three domestic workers. The outbreak, which has involved patients, babies, and staff, and on occasion home contacts of these persons, started on July 7 and continued at the time of writing (June 25, 1947).

Clinical Aspects of the Disease in Adults.—The relative frequency of symptoms and signs and the mean duration of diarrhoea observed in a number of patients are summarized in Table I. The first indication of illness was usually diarrhoea of acute onset, with the passage of eight to ten stools in 24 hours in cases of moderate severity. The stools were unformed, very watery, free from blood and pus, resembled "milky tea" in colour, sometimes contained mucus, and were very offensive in smell. The vomiting was usually of short duration and the temperature rarely exceeded 100° F. (37.8° C.). Direct questioning revealed respiratory symptoms in five out of the 35 patients, one having epistaxis, three nasopharyngitis, and one both symptoms (Table I); the true relation between respiratory and intestinal symptoms was indefinite.

TABLE I.—*Symptoms and Signs in Adult Gastro-enteritis Patients*

	Group A	Group B
Total No. of ill persons	23	35
Headache	No record	14 (40%)
Epistaxis	"	2 } 5* (14·3%)
Nasopharyngeal congestion	"	4 }
Nausea	12 (52%)	17 (48·6%)
Giddiness	No record	6 (17·1%)
Vomiting	9 (39%)	14 (40%)
Diarrhoea	23 (100%)	35 (100%)
Abdominal colic	4 (17·3%)	23 (65·7%)
Temperature above 99° F. (37·2° C.)	10 (43·5%)	12† (41·4%)
Mean duration of diarrhoea	3·7 days (2–5 days)	3·9 days (1–7 days)

Group A = data from case records (July and August, 1946).
Group B = patients and six members of the staff interviewed by investigators (August to October, 1946).
* One patient had both symptoms.
† Of 29 cases in which temperature was recorded.

Diarrhoea and Vomiting Among the Newborn.—The clinical condition of the infants was particularly difficult to assess because of the mildness of the symptoms. Study of the ward records revealed three varieties of bowel action: (*a*) passage of a formed or semiformed yellowish stool after each feed (well); (*b*) increased frequency of defaecation associated with the passage of looser yellow stools necessitating more frequent changes of napkin (Class I); and (*c*) passage of a loose, green, slimy, offensive stool, associated with increased frequency of defaecation and sometimes excoriated buttocks (Class II). The incidence of these grades of bowel activity in the infants of well and ill mothers is recorded in Table II

TABLE II.—*Incidence of Disease among Infants of Ill and Well Mothers*

Infants	No. of Infants associated with		Total
	Ill Mothers	Well Mothers	
Class I	19 (21·6%)	29* (23·9%)	48
Class II	42 (47·7%)	24† (19·8%)	66
Well	27 (30·7%)	68‡(56·2%)	95
Total	88	121	209

NOTE.—One pair of twins equals one child for purpose of table, as each twin in the two pairs reacted in the same way as its sibling.
* Includes the infants of eight mothers who had diarrhoea after discharge from hospital and of two mothers with "doubtful" symptoms.
† Includes the infants of seven mothers who had diarrhoea after discharge from hospital and of two mothers with "doubtful" symptoms
‡ Includes the infants of 10 mothers who had diarrhoea after discharge and of 12 mothers who had "doubtful" symptoms.

and their significance is assessed in the discussion. For convenience and brevity infants with Class II bowel signs are described below as suffering from gastro-enteritis. Such infants never became severely dehydrated, nor was their eventual progress affected.

Epidemiology.—The majority of patients were delivered soon after admission, but there was some contact at mealtimes between cases awaiting delivery for any length of time and those about to be discharged. Infants spent most of the day in cots by their mothers' beds, and at night were transferred to a common nursery on the second floor. Washing, changing, and supplementary feeding were carried out in the nursery, and there was necessarily some contact between infants from different wards. An analysis is made below of the epidemiological data for all patients admitted during the period July 4 to Nov. 29, 1946, inclusive. During this period 216 women were admitted, of whom 209 gave birth to viable infants (207 single births and two pairs of twins).

The outbreak, which continued until the unit was closed on Nov. 29, was apparently started by the admission to the unit on July 4 of a patient suffering from slightly relaxed and offensive stools, which became more frequent and watery during the next three days. Fig. 2 shows the daily incidence

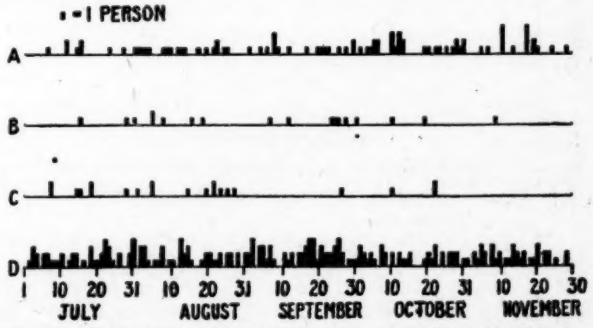

FIG. 2.—Daily incidence of new cases of gastro-enteritis among adult patients and staff, and daily number of admissions to the unit. A=Overt cases among maternity patients. B="Doubtful" cases among maternity patients. C=Cases among staff. D=Admissions of maternity patients.

of new cases among adult patients and staff and also the daily number of admissions to the unit during the period. In this figure the adult patients have been divided into overt and "doubtful" cases: the symptoms of the latter were so slight—consisting merely of a few loose stools on one day only—that it was difficult to know whether they were suffering from a bowel disturbance of a non-infective nature or were cases of true but mild gastro-enteritis. The staff in the unit at the start of the outbreak succumbed in the first weeks, the cases during the last months being new recruits who generally became ill within ten days of joining. Fig. 2 does not include "illness" among the babies, the first of whom became ill on July 11. The subsequent daily incidence of new cases among the babies resembled that of the mothers.

Attack Rates among Adult Patients and Staff.—The attack rate of all adult admissions during the period July 4 to Nov. 29 was 52.3%, including those patients whose illness began after discharge. The number of attacks per 1,000 patient-days of exposure for each of the five months was: July, 41.6; August, 46.4; September, 60.8; October, 93.3; November, 83.3. Of 211 infants born between July 4 and Nov. 29, 68 (32.2%) had gastro-enteritis. The nursing and domestic staff also experienced a high attack rate: of 32 persons employed during the period July to November, 21 (65.6%) had gastro-enteritis. Second attacks, one and two months after the first, were experienced by two members of the staff.

Relation of Onset of Diarrhoea to Day of Admission.—The majority of cases of gastro-enteritis among the mothers began between the fifth and ninth days after admission, the shortest and longest periods observed being three and 18 days. The usual length of stay in the unit was nine to 14 days for healthy women, and it was evident that some patients must have been discharged before the beginning of their illness. A "follow-up" in co-operation with the Oxford Health Visitor Service of 94 patients discharged during the period July 4 to Nov. 29 revealed that in 25 (26%) gastro-enteritis had started not later than three days after discharge.

Incubation Period.—Patients did not develop gastro-enteritis in less than three days after admission, and those discharged in the incubating stage of the malady were sometimes at home for a period of two days before having symptoms. In a sample of 216 persons some must have been infected very shortly after admission and on the day of their discharge. Hence the shortest period between admission and onset and the longest period between discharge and onset should approximate to the incubation period. These considerations suggest that the incubation period was two to three days. This estimate agrees in general with that deduced from "single contact" episodes involving the families of sick maternity patients and staff.

Time Relation of Illness in Mothers and Infants.—Fig. 3 has two curves: one (A) showing the number among 66 infants

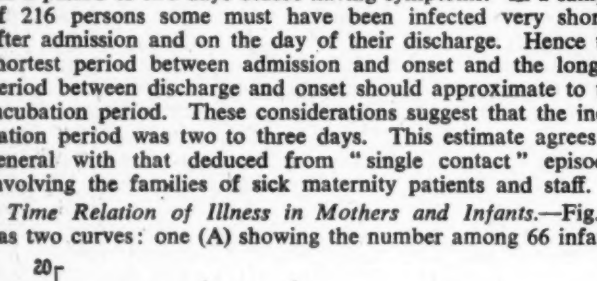

FIG. 3.—Time relation of gastro-enteritis in mothers and infants. A=Number among 66 infants. B=Number among 87 mothers starting gastro-enteritis on each day after delivery.

and the other (B) the number among 87 mothers starting gastro-enteritis on each day after delivery. It will be seen that the onset of gastro-enteritis in the infants was, in general, earlier than that in the mothers, for curve A reaches a peak some three days before curve B. In the group of 42 mothers and infants with gastro-enteritis the onset in the infant was either before (22), simultaneous with (5), or after (15) that in the mother.

Gastro-enteritis Among Families of Maternity Patients.—Table III shows the number of patients in various categories whose discharge from the maternity unit was followed within a month by one or more familial cases of gastro-enteritis. There is a marked difference between the number of families having gastro-enteritis cases when the returning patient had

TABLE III.—*Gastro-enteritis (G.E.) Among Families of Maternity Patients*

Patient's Status Inside Hospita	Total	Followed Up	Families with One or More Cases of G.E. Within a Month of Return of Patient
Overt G.E.	88	83	13 (15·6%)
Doubtful G.E. ..	19	15	2 (13·3%)
Well	109	69*	1 (1·4%)
		25†	6 (24%)
Total	216	192	22

* Remained well after discharge. † Developed gastro-enteritis after discharge.

had diarrhoea in the hospital (15.6%) or shortly after discharge (24%), and the number of families in which the returning member had never had symptoms (1.4%). A difference of the size of that existing between the families of the healthy patients and of patients who had gastro-enteritis in the maternity unit is unlikely to have arisen by chance alone ($\chi^2_{Yates}=7.48$, N=1, P=<0.01).

Several conclusions can be drawn from the occurrence of secondary familial cases. First, the number of patients who "caused" secondary familial cases was a small proportion of the total sick patients discharged from the unit (Table III). Secondly, familial contact cases were more frequent when the time between onset and discharge in the primary case was short, but periods up to 10 days were occasionally observed. Thirdly, the period between onset in the primary and in the first secondary case was variable and lay between four and 29 days, figures which include the incubation period of the secondary case. These data indicate that the period of infectivity in some patients is certainly as long as 10 days and possibly as long as 26 days.

Gastro-enteritis in the Rest of the Hospital.—A few sporadic cases of gastro-enteritis occurred in the chronic sick wards of the hospital, but the incidence of the disease was much greater in the maternity unit; for this reason spread of the disease by food from the central kitchen supplying the whole hospital seemed unlikely. Milk and water supplies to the maternity unit were sampled and did not show evidence of faecal pollution.

Control Measures.—Control measures, in the absence of exact knowledge of the mode of spread of the disease, were necessarily limited to ordinary hygienic precautions. Incoming patients were asked about outside contact with the disease and were kept separate from those about to be discharged. Recently delivered patients were admitted to wards on the so-called "Boston" system, and, when possible, gastro-enteritis patients were transferred to the local isolation hospital and ward contacts isolated. Babies with gastro-enteritis were removed from the nursery and kept by their mothers' beds. The administration of mepacrine prophylactically and also therapeutically did not affect the occurrence of new cases in the unit—an experience contrary to that of Freedman.[10] The limited isolation accommodation available and the lack of staff specifically trained in barrier nursing made the application of control measures difficult, but even when such measures were rigidly enforced in a local isolation hospital four members of the nursing staff were cross-infected from a newly admitted maternity patient.

On Nov. 29 the medical officer of health, Dr. G. C. Williams, closed the home to new admissions, it being completely empty from Dec. 6 to 21. This decision had not been taken earlier because of the difficulty of arranging alternative accommodation for patients awaiting admission. During the period of closure fumigation and structural alterations were made, but in spite of these measures further cases of gastro-enteritis occurred 10 days after the home was reopened.

Laboratory Investigation.—The stools, usually obtained within one day of collection, were examined as follows:

Microscopical Examination.—A small piece of faecal material was suspended in a mixture consisting of equal parts of 1% eosin and iodine and examined for pus cells, red blood cells, ova, and cysts.

Culture.—All stools were plated direct on to desoxycholate-citrate agar and on to Wilson and Blair's medium. In addition a large loopful of a liquid stool or of a broth suspension made from a solid stool was inoculated into Kauffmann's tetrathionate broth and into selenite-F. After 18 to 24 hours' incubation a loopful from each of these enrichment media was plated out on both desoxycholate-citrate agar and Wilson and Blair's medium.

As some of the earlier specimens failed to produce growth on the selective media used, all stools were subsequently streaked on to MacConkey's medium. Many of the stools were also inoculated on to blood-agar plates and incubated aerobically and anaerobically.

Results of Stool Examinations.—Stools were examined on 77 occasions from 55 patients—namely, 40 mothers and four babies in the maternity unit, five affected members of the staff, and six contact cases. Microscopical examination of the faeces was carried out on specimens received from 52 patients. Pus cells, usually in small numbers, were found in nine cases, associated in one instance with red blood corpuscles. No protozoal cysts or ova were seen in any of the specimens. *Clostridium welchii* was present on only a few occasions on blood-agar plates, and Group D streptococci were never isolated. Organisms of the *Salmonella–Shigella* groups were not isolated from any case. The results of stool culture in 55 cases were as follows: sterile (4), lactose fermenters only (29), *Proteus* group (4), paracolon bacilli (18). The dissimilarity of the biochemical reactions of the paracolon bacilli and their failure to react significantly with patients' sera suggested that they were not responsible for the outbreak.

Other serological investigations included the testing of acute and convalescent phase sera for heterophil agglutinins (4° and 37° C.) to red cells of horse, rabbit, chick, rat, guinea-pig, and sheep, and for "cold" agglutinins to human Group O cells. Paired sera were also tested for a rise in the agglutinin titre to influenza viruses A and B. The influenza antibody titrations were kindly carried out for us by Dr. J. A. Dudgeon, of the National Institute for Medical Research. All of these serological tests were negative.

Leucocyte Counts.—We are much indebted to Mr. B. H. Ryalls, of the Radcliffe Haematology Department, for making the leucocyte counts. Leucocyte counts on 14 puerperal women with gastro-enteritis revealed that seven had a neutropenia below 3,600 cells per c.mm. within the first five days of the illness. The other seven patients had counts approaching the lower limit for normal non-puerperal cases. In a control series of 66 counts made on 28 normal women at exactly comparable stages of the puerperium no value below 3,600 neutrophil leucocytes per c.mm. was observed.

Discussion

The clinical picture presented by the adults in this outbreak is similar in most respects to that described by other authors.[1 2 11 12 13 14] The mildness of the signs in the babies and the absence of a specific laboratory test made it difficult to decide whether the observed changes in the infants' bowel action were due to infection or not. Infants having Class I bowel activity were equally distributed among sick and healthy mothers (Table II), and it is likely that this change was of no significance.

Class II bowel activity, however, was more frequent (Table II) in the children of sick mothers than would be expected by chance alone ($\chi^2_{Yates} = 17.07, N = 1, P = <0.001$). The number of infants starting such signs rises to a maximum earlier after delivery than does the number of mothers commencing diarrhoea (Fig. 3); in a group of sick mothers and infants the onset in the infants may be before, simultaneous with, or after that of the mother. These facts are compatible with the view that Class II bowel activity is due to infection of the infant and that the varying time relation of the onset of diarrhoea in mother and child represents a reciprocal spread of infection.

It is evident that the clinical aspects of infants in this outbreak are quite different from the severe diarrhoea, toxicity, and high case fatality rate characterizing "epidemic diarrhoea of the newborn,"[23 24] and also from the combination of stomatitis and diarrhoea in infants described by Buddingh and Dodd.[25] In the present series of 66 infants with gastro-enteritis only three had stomatitis.

The disease presents two main problems: aetiology and its mode of spread.

Salmonellae, Shigellae, paracolon organisms, or protozoa were not incriminated in this outbreak, and the possibilities remaining are infection with a bacterium of exacting growth requirements or with a virus. Reimann *et al.*,[22] using material from a clinically similar outbreak in Philadelphia, found that student volunteers could be infected by inhaling medium Mandler filtrates of stool or garglings. No significant result was obtained by feeding the filtrates or serum enclosed in gelatin capsules. The incubation period in the successful experimental inoculations was very variable: about half (58%) the volunteers became ill in two to five days, while the remainder did not succumb until nine to 21 days after inoculation. Reimann interpreted the results of these experiments to mean that the causative agent was filtrable, entered the body through the respiratory tract, and therefore was transmitted as an air-borne infection. This concept of air-borne infection was supported by the seasonal incidence of the outbreaks in Philadelphia (both the 1943 and the 1944 outbreaks took place in October and November) and by the occurrence of prodromal respiratory disease in a proportion of patients, although Reimann was uncertain whether the respiratory symptoms (38% in the 1944 outbreak) were due to the disease or concurrent "colds."

In our experience of this and seven other outbreaks prodromal respiratory disease has been a rare and unconvincing finding, and it would be remarkable, in a disease with such a short incubation period, if the site both of the invasion of the "virus" and that from which it was expelled as droplets should show no overt disease. The number of reported outbreaks in this country is not yet large enough to judge the seasonal incidence, and more data on this point are needed.

Sources of Infection and Pattern of Spread

Leaving aside the unsettled question as to whether the disease is air-borne or transmitted by the intestinal–oral route, it was noted in the present outbreak that there were certain patterns of spread determined by the organization of the maternity unit.

A maternity unit is more complex epidemiologically than the ordinary hospital ward or institution, partly because its population is changing rapidly and partly because of the presence of the babies, who are susceptible to infection and whose discharges are difficult to control without an efficient aseptic technique. It is of interest to contrast the high infectivity of the disease in the maternity unit with its low infectivity in the chronic sick wards of the rest of the hospital. Deductions about the method of spread of infection from such high attack rates in the special circumstances of a maternity unit may therefore be misleading.

The admission of the first patient with diarrhoea was followed by a straggling series of cases among patients and staff with a steadily mounting number of attacks per 1,000 patient-days of exposure—a fact which, taken in

conjunction with the low number of admissions during the last two months, suggests that the rate of spread of the disease was not closely correlated with the rate of change of the maternity unit population. Some patients were probably infected from convalescent cases about to be discharged, and others from previous overt or possibly mild atypical cases in the same ward. Carriers among the staff must be regarded as a possibility because most of the staff had the disease, and in view of the data given on the duration of infectivity a few probably remained infectious for some time. This possibility is supported by the fact that cases occurred in the families of staff who were convalescent from the disease.

Lastly, though the significance of the sick infants is undecided and needs further investigation, the possibility of spread between mothers in different wards via their infants infected in a common nursery must be considered.

In this outbreak the association of sick mothers and infants and the time relation of their signs suggests that a reciprocal spread of infection may have occurred. On the other hand, if such a route of infection was important it might be expected that the sick mothers would more often be associated with a sick infant whose onset of illness preceded theirs than would be expected from the ratio of sick infants to healthy mothers; thus of the 88 sick mothers, 22 (25%) had an infant with signs starting before theirs, while of 66 entirely healthy mothers 10 (15%) had sick infants. Differences of this order would be frequently observed by chance alone. We feel that, although conclusive proof of the nursery spread is lacking, owing possibly to the difficulty of detecting "infective" infants on clinical grounds alone, it is a route that cannot be ignored. It is of interest that the data in Brown, Crawford, and Stent's paper,[2] not commented on by these authors, show that the babies were the first to become ill in the maternity wards, that illness in mother and infant was often associated, and, further, that in this group the babies, with one exception, became ill before their mothers, the average interval between them being 4.4 days.

Summary

An outbreak of gastro-enteritis among mothers, staff, and babies in a maternity unit is described.

The disease was characterized in adults by diarrhoea, slight fever, a watery stool of light yellow colour, and, in some patients, by neutropenia.

The babies had milder symptoms consisting of loose green stools sometimes accompanied by excoriated buttocks.

Salmonellae, Shigellae, paracolon bacilli, and protozoa were not found to be responsible for the disease.

The incubation period in adults was one to three days. The period of infectivity appeared in a few adult patients to be as long as 26 days from the onset of diarrhoea.

A "follow-up" of the discharged maternity patients revealed that 26% developed gastro-enteritis after discharge and that 15 to 24% of the families of returning sick maternity patients became infected.

Epidemiological investigations indicate that new admissions could have been infected from overt, atypical, or convalescent cases of gastro-enteritis or from carriers of the disease in the staff. It is also suggested that infection of infants in a common nursery might account for the occurrence of sporadic cases among mothers in different wards in the unit.

The outbreak appears to be an example of a common and widespread disease in the special circumstances of a maternity unit which had apparently facilitated its spread.

It is a pleasure to record our thanks to Mr. Ian Sutherland (Institute of Social Medicine, Oxford) for statistical advice; to Dr. G. C. Williams (M.O.H., Oxford City) and Dr. H. C. Jennings (M.O.H., Oxford County) for their suggestions and co-operation; to Misses Brown and Owen, the heads of the Oxford City and County Health Visitor Services, and their staffs for their painstaking investigations in the family "follow-up"; to Dr. J. Spence, physician-in-charge of the Maternity Unit, and Dr. R. B. Crail, R.M.O., whose co-operation and suggestions were of great value; to the sisters-in-charge in the Maternity Unit; to Dr. A. Menzies, superintendent of the Oxford City Isolation Hospital; and to general practitioners who collected blood samples and sent us information about cases.

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SUPPURATIVE ARTHRITIS OF HIP-JOINT TREATED WITH PENICILLIN

REPORT OF FOUR CASES

BY

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Acute staphylococcal suppurative arthritis of the hip-joint is luckily of comparative rarity. Four cases in close succession have recently been under treatment with penicillin in Suva, Fiji, and the good final results obtained may be worthy of record.

Case 1

A male Fijian aged 6 was admitted to hospital with four days' history of pain in the right hip. Acute suppurative arthritis of the hip-joint was suggested by clinical examination, pyrexia, high leucocytosis, and absence of radiographic abnormality. Several septic skin spots were present. Exploratory aspiration of the joint yielded a very small amount of thick pus, which showed pure *Staphylococcus aureus* on culture.

Penicillin, 10,000 units in 5 ml., was injected into the joint after aspiration and a similar injection being repeated twice on alternate days. Systemic penicillin, 20,000 units three-hourly, was administered for seven days. Extension was applied on Thomas's splint for ten days, followed by a hip spica plaster which was maintained for six weeks, the patient being allowed up during the last two weeks. He remained in hospital for a further five weeks, and on discharge (three months from onset of the disease) had a full range of movements to the hip-joint with complete absence of symptoms. Skiagrams after removal of the plaster showed definite evidence of localized bony infection of the upper acetabular rim: probably this primarily was osteomyelitis of the area with early infection of the joint. When seen five months later he was quite fit, with full movements of the joint.

Case 2

A European girl aged 10 came with two days' history of pain in the right hip. Acute suppurative arthritis of the hip-joint was diagnosed. A septic spot was present on the right knee

The temperature was 104° F. (40° C.) and the pulse 120; her general condition was good. Exploratory aspiration of the joint yielded 2 ml. of thick pus containing pure *Staph. aureus*.

Penicillin, 9,000 units in 3 ml., was injected into the joint, and was repeated after re-aspiration in 48 hours. Systemic penicillin, 30,000 units, was given three-hourly for five days; then 60,000 units six-hourly on the 11th to 14th days for slight recurrence of pyrexia. Extension on Thomas's splint was applied. Plaster was not used, though originally intended, owing to development of a distressing urticaria (? late penicillin effect). Thomas's splint was maintained for four weeks, and for the next two weeks she remained in bed without splinting. She was then allowed up, already having full movements to the hip-joint, and no pain or limp. Skiagrams throughout showed no evidence of bony involvement. The patient was discharged after 8½ weeks' stay in hospital, and 3½ months later she was fit, with full movements.

Case 3

An Indian boy aged 11 was admitted with one day's history of pain in the left hip. Clinical examination suggested suppurative arthritis of the hip-joint with severe toxaemia. Temperature 104° F. (40° C.), pulse 106; high delirium. Exploratory aspiration yielded much thick pus containing *Staph. aureus* on culture. Penicillin, 15,000 units in 5 ml., was injected into the joint; this dose was repeated after aspiration on three subsequent occasions on alternate days. Systemic penicillin, 30,000 units three-hourly, was given for seven days. Delirium and high pyrexia continued for 48 hours, then marked improvement, but some pyrexia continued for ten days. Extension on Thomas's splint was applied for 17 days, followed by a hip spica plaster, which was removed after four weeks. The patient was discharged one week later, having been eight weeks in hospital; there was then slight limitation of flexion and rotation. Three weeks later full hip movements were present. Skiagrams throughout showed no evidence of bony involvement. Three months later he remained fit, with full movements.

Case 4

This patient, a Fijian girl aged 16, gave a six-days history of increasing pain in the left hip. A low-grade paronychia of the finger had been incised seven days previously. Clinically, there was typical acute arthritis of the hip, with severe local symptoms but good general condition. Temperature 100.4° F. (38° C.), pulse 100.

Aspiration yielded 6 ml. of thin pus containing *Staph. aureus*. Penicillin, 30,000 units in 6 ml., was injected into the joint and 70,000 units intramuscularly, followed by 30,000 units intramuscularly three-hourly for seven days. Two days later re-aspiration yielded 4 ml. of pus, and 20,000 units in 4 ml. was injected into the joint. On the 14th day a secondary rise of temperature without symptoms occurred, and 30,000 units of penicillin was given three-hourly for three days. (This pyrexia was probably from mild influenza, which was travelling through the wards.) Extension on Thomas's splint was maintained for four weeks, and for the next two weeks the patient rested in bed; by this time movements of the joint were full and painless and she was allowed up. One week later (seven weeks from admission) she was discharged cured. Skiagrams showed no evidence of bony involvement. One month later she was fit, with full movements.

Discussion

All four cases arose presumably from septic skin lesions by blood-stream infection. Blood cultures were not carried out. Cases 2, 3, and 4, which showed no radiographic changes throughout, were primary joint infections, whereas Case 1 was presumably a primary acetabular osteomyelitis with rapid spread to joint.

The cases varied considerably in virulence, Case 3 being severely toxic, Case 4 remarkably low-grade, Cases 1 and 2 intermediate. All were treated by repeated aspirations of the hip-joint with instillation of penicillin on alternate days, and by systemic penicillin; the average treatment was three local injections, after aspiration, of 13,000 units of penicillin each time, and 1,785,000 units systemically. The anterior approach to the joint was adopted in all cases and no difficulty was experienced, "pentothal" or inhalation anaesthesia being used.

The relative values of the local and general penicillin are difficult to estimate. Systemic application is obviously indicated to combat the bacteraemia, and it is probable that aspiration and local penicillin reduce the degree of cartilage destruction and joint damage. It is probable that time is the most urgent factor, and that any suggestive case should be aspirated and penicillin injected into the joint immediately, this being the major element in obtaining full final movements.

Two cases were immobilized in plaster when acute symptoms subsided; two cases were confined to bed for a similar period without plaster. These last showed the earliest return of full movement, and suggest that plaster is perhaps unnecessary. The times of immobilization were probably longer than necessary, but (in children at least) it appeared safer to err on the side of discretion.

Treatment.—There was no standardization of treatment in these four cases, but the following would appear to give a reasonable line of procedure: (1) Immediate exploratory aspiration by the anterior route under pentothal anaesthesia; as much pus as possible to be removed, and replacement by an equal volume of penicillin solution (3,000 units per ml.). (2) Intramuscular penicillin, 30,000 units per ml., to be given three-hourly for a week. (3) Re-aspiration on alternate days with replacement by penicillin until there is local freedom from pain and examination of pus shows absence of degenerate forms only of staphylococci. One to three repetitions may be needed. (4) Immobilization with extension from the start, strapping extension with a Spanish windlass on Thomas's splint (applied under the first anaesthetic) being a simple method; this to be maintained until the patient is symptom-free and apyrexial. (5) Rest in bed to be maintained until the end of the fourth week; active movements of joint then to be encouraged. The patient should be allowed up at six weeks, when there should be a full range of movements and absence of symptoms. (6) The primary skin lesion should be treated as required, but it will probably regress under the influence of penicillin.

Summary

Four cases of suppurative staphylococcal arthritis of the hip-joint which were treated by combined systemic and local penicillin are described.

All the cases were cured, having full final movements of the affected joints.

Some points in treatment are discussed.

I am indebted to Dr. J. C. R. Buchanan, Inspector-General, South Pacific Health Service, for permission to publish this report.

In the latest report of the Institute of Medical and Veterinary Science of South Australia three Adelaide workers recount an investigation they have been making over a period of four years into the connexion between rubella and congenital malformations. The total number of cases studied of rubella occurring in pregnancy was 120. Out of 20 in which the infection occurred in the first month of pregnancy it was followed by some congenital abnormality in 19; out of 42 in the second month a congenital abnormality appeared in 40; out of 23 in the third month it appeared in 21. The most frequent of the defects was microcephaly (62 cases), and the next most frequent were heart disease (52) and deaf-mutism (48). In the latest series of cases, numbering 25, the mother had contracted rubella during pregnancy in 17, and 15 of the babies born exhibited congenital defects, including cataract, deaf-mutism, heart disease, umbilical hernia, mental deficiency, epilepsy, and speech defect. In the remaining 8 cases the infectious diseases contracted during pregnancy comprised 3 of morbilli (one of the babies was born defective), 2 of mumps (both infants had abnormalities), 1 of scarlet fever (the baby was normal), 1 of "rheumatic influenza" (the infant was malformed), and 1 of pustular rash (the baby was defective).

TREATMENT OF VARICOSE VEINS

POSSIBLE DANGER OF INJECTION OF SCLEROSING FLUIDS

BY

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AND

D. J. ROBERTSON, F.R.C.S.

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Our purpose here is to discuss the causes of unsatisfactory results of treatment of varicose veins. The veins have been studied by phlebography and also by direct examination at operation. The numbers so studied are small. This paper is a preliminary communication. Further anatomical studies and follow-up results will be incorporated in a future publication.

Examination of the whole problem of the treatment of varicose veins is well worth while. Patients complaining of varicose veins form a significant percentage of out-patients at any hospital. In military hospitals they compete with painful feet and piles as the principal cause of loss of man-hours. A soldier patient of one of us (A. M. B.) had spent 18 months out of two years' military service attending various hospitals for treatment of his varicose veins.

Are varicose veins a cause of disability? It is significant that 95% of patients attending civilian varicose vein clinics are women. In many instances they admit seeking advice for purely cosmetic reasons, occasionally from fear of future ulceration; only a small minority complain of pain. Where are the thousands of young men whose varicose veins gave rise to agony in the Services but who do not complain in civilian life?

These facts strongly suggest that varicose veins seldom cause serious discomfort. It is our contention that a very careful clinical assessment should be made in each case before advising operation. The most popular operation for varicose veins is ligation combined with retrograde injection of sclerosing solutions.

Unsatisfactory results fall into two main groups: (1) recurrence, and (2) deep thrombophlebitis.

Recurrence

Recurrence of varicosities after operation is due partly to inadequate ligation and partly to subsequent development of valvular incompetence in deep perforating veins. The internal saphenous systems may be refilled at several levels.

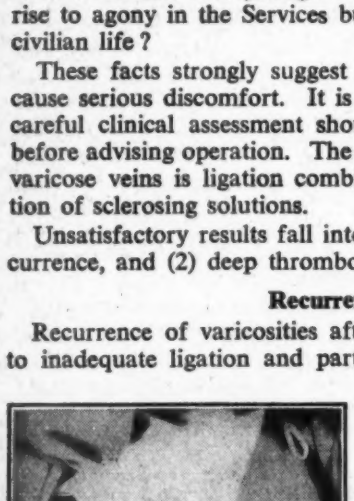

FIG. 1.—Dilated tributaries of saphenous vein refilling main trunk following inadequate ligation in groin.

(*a*) *Groin.*—The importance of ligation of all the tributaries entering the saphenous vein at the fossa ovalis has been stressed repeatedly by many authorities. Failure to do so may lead to rapid recurrence (Fig. 1). It is outside the scope of this paper to discuss the anatomical variations which occur at the fossa ovalis leading to inadequate ligation. This subject has been ably reviewed by McPheeters (1945) and Daseler *et al.* (1946). It should, however, be mentioned that oblique incisions parallel to the inguinal ligament, while sound from the point of view of healing, may give inadequate access where the sapheno-femoral junction is abnormally placed. Vertical incisions may be enlarged upwards or downwards where the sapheno-femoral junction is unusually high or low or where large tributaries enter further distally than normal.

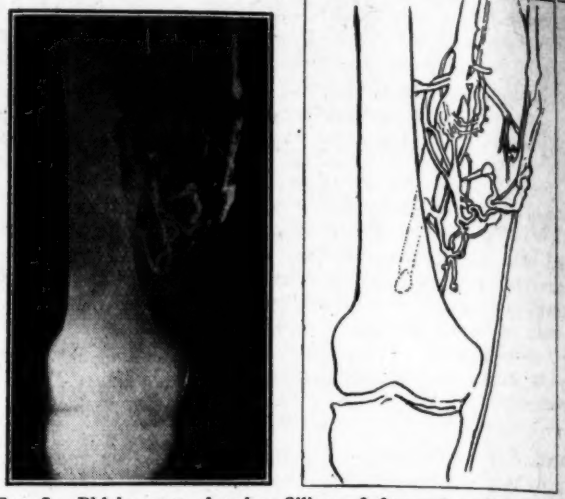

FIG. 2.—Phlebogram showing filling of femoral and upper third of popliteal vein following injection of pyelectan into the distal end of the divided saphenous vein.

(*b*) *Lower Third of Thighs.*—The internal saphenous vein communicates with the femoral vein in the lower third of the thigh through a large perforating vein. This vein was present in twelve consecutive phlebograms (Figs. 2 and 3). It is found 4 to 6 in. (10 to 15 cm.) above the adductor tubercle. The exact position of this perforator can be detected clinically, if it is a source of regurgitation from the deep to the superficial systems, by means of the tourniquet test of Mahorner and Ochsner (1938) combined with careful circumferential palpation of the limb. When a "blow out" is evident in the internal saphenous vein in the lower third of the thigh it is the rule to find a deep connexion related to it, usually within 1 in. (2.5 cm.) of the swelling.

(*c*) *Knee.*—A communicating vein is very commonly found passing from the external saphenous vein behind the internal condyle to join the internal saphenous vein. It can be easily detected by careful palpation. Failure to ligate this vein may lead to filling of the internal saphenous system from the external saphenous vein.

(*d*) *Below Knee.*—Perforating veins linking the superficial with the deep veins occur regularly below the knee. One large

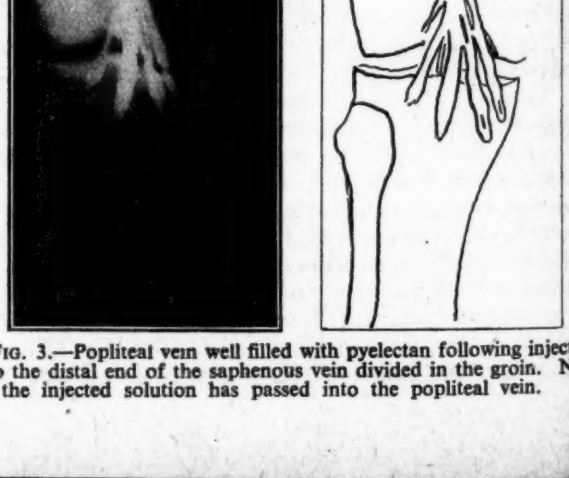

FIG. 3.—Popliteal vein well filled with pyelectan following injection into the distal end of the saphenous vein divided in the groin. Note *all* the injected solution has passed into the popliteal vein.

perforator is often present about 1 in. below the articular margin of the tibia.

Consideration of these facts suggests that in fully developed varicosities of the internal saphenous system ligation is required at four sites: (1) fossa ovalis—division of the saphenous vein and ligation flush with the femoral vein, together with ligation of all tributaries of the saphenous at this level; (2) ligation of the perforating vein in the lower third of the thigh; (3) ligation of the communication from the external saphenous vein, if present; and (4) ligation of the internal saphenous vein immediately below the internal condyle of the tibia.

Deep Thrombophlebitis

Deep thrombophlebitis occasionally follows high ligation of the saphenous vein combined with injection, distally, of sclerosing solutions. A common practice is to pass a ureteric catheter down the saphenous vein to knee level and inject 5 ml. of sclerosing solution slowly as the catheter is withdrawn. A deep thrombophlebitis may also follow simple injection by subcutaneous puncture.

Disability varies with the extent of the phlebitis, ranging from some aching in the calf and slight oedema of the ankle at the end of the day to a full-blown "white leg." The frequency of this complication is hard to assess. One of us (A. M. B.), working in a large base hospital in Cairo, saw 12 patients with deep phlebitis following injection treatment between October, 1942, and February, 1943. The disability was such that discharge from the Army was recommended. A short paper drawing attention to this danger was read at the Middle East Surgical Conference in March, 1943. In the weekly recategorization boards held at this hospital at least one patient every week had to be down-graded for deep phlebitis. The latter condition was undoubtedly due to the sclerosing fluid entering the deep veins. In order to investigate this possibility, phlebographic studies have been made of the distribution of fluids injected into the saphenous vein at various levels.

Thigh and Leg Segments

Thigh Segment.—The saphenous vein was ligated and divided in the usual way at the fossa ovalis. A plate, 12 by 14 in. (30 by 35 cm.), was placed beneath the thigh and 15 ml. of "pyelectan" was injected into the distal end of the divided vein, the injection taking about 10 seconds. A single exposure was taken at the conclusion of the injection. Twelve consecutive patients with typical dilatation of the internal saphenous system and varicosities below the knee were investigated in this manner. These phlebograms showed that most of the pyelectan had entered the femoral vein through a communicating vein in the lower third of the thigh. A large communication between the saphenous and femoral veins was found in all 12 cases; the vein was relatively constant in position 4 to 6 in. (10 to 15 cm.) above the adductor tubercle.

Leg Segment.—In a further series the saphenous vein was divided at the level of the internal condyle of the femur and pyelectan was injected into the distal segment. In one patient a large communicating vein was seen just below the articular margin of the tibia through which pyelectan passed into the popliteal vein (Fig. 4). In the remaining patients, however, most of the contrast medium remained in the superficial varicosities, only a small amount reaching the deep veins (Fig. 5). It would seem, therefore, that injection of sclerosing solutions distally, from the knee downwards, is relatively safe. The likelihood of significant quantities passing into the deep veins is remote, since the communicating veins below the knee, although numerous, are small.

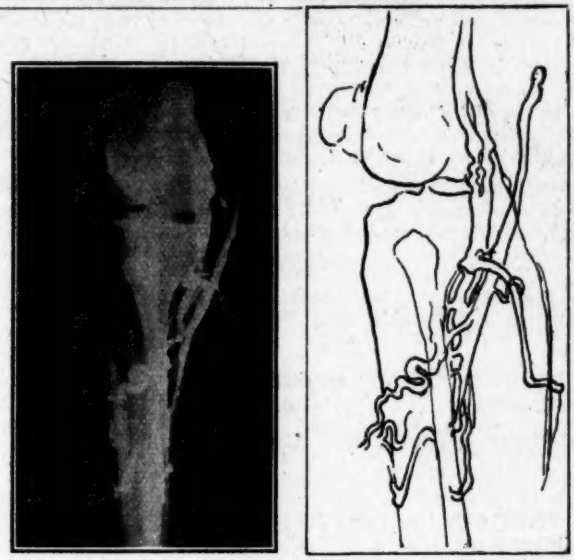

FIG. 4.—Saphenous vein divided at level of internal condyle of femur. Pyelectan injected into distal end. Some of the opaque solution has passed through a perforating vein just below the level of the knee-joint, filling the popliteal vein. This is an exceptional recurrence.

It would be possible, however, by subcutaneous puncture if made in close proximity to a deep communication, to inject sclerosing fluids direct into the deep veins.

Summary and Conclusions

Unsatisfactory results of treatment of varicose veins are due to recurrence and to deep thrombophlebitis. Recurrence can usually be explained by inadequate ligation. Deep thrombophlebitis, although uncommon, is a serious disability.

This investigation demonstrates the possible danger resulting from high retrograde injection of sclerosing solutions. The obvious criticism is that a very small amount of sclerosing solution is used, and that if any reaches the deep veins it would be diluted and washed away.

The length of time contrast media remain in the femoral vein with the leg horizontal and at rest, coupled with the fact that the whole length of the popliteal vein is filled by fluid passing through the perforating vein in the lower third of the thigh, suggests that the blood flow in the femoral vein under these conditions is very sluggish. Very small amounts of irritant substances might cause intimal damage with subsequent venospasm and clotting. High retrograde injection of large quantities (20–30 ml.) of strong dextrose or salt solutions is undoubtedly dangerous.

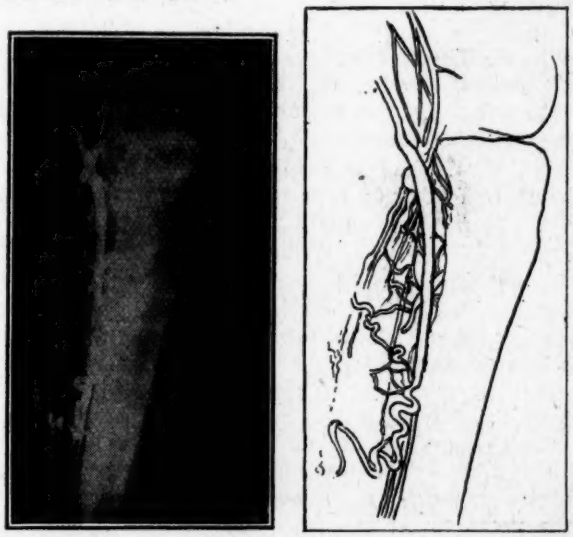

FIG. 5.—Phlebogram obtained by technique similar to that employed in Fig. 4. Insignificant quantities of the opaque solution have reached the deep veins.

The ease with which fluids injected distally from the groin level pass into the femoral veins suggests that high injection of the thigh segment is unwise. There is much less risk below the knee. The large perforating vein immediately below the knee shown in one phlebogram appears to be inconstant. The remaining deep communications are small.

In our opinion operative treatment of varicose veins should consist of adequate ligation with, if necessary, distal injection from knee level of not more than 5 ml. of sclerosing solution.

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PENICILLIN BY INTRA-ORAL DRIP

BY

G. RIDDELL ROYSTON, M.D., M.R.C.P., D.C.H.

This short paper describes a method for the continuous local application of penicillin to the mouth and fauces, together with some clinical impressions.

Penicillin has been used for the treatment of various pharyngeal infections by local applications in the form of sprays (Woodward and Holt, 1945), pastilles (MacGregor and Long, 1944, 1945a, 1945b), lozenges (Woodward and Holt, 1945), snuff (Meadley and Barnard, 1946), and swabbing (Schallenberger *et al.*, 1945), and by intramuscular injection (Schallenberger *et al.*, 1945; Schwartz, 1945; Bronstein, 1946) and injection of the pharyngeal tissues (Cone, 1945). Results have been encouraging for Vincent's infections (Woodward and Holt, 1945; MacGregor and Long, 1944; Schwartz, 1945). MacGregor and Long (1945a, 1945b), using pastilles containing methylene blue on healthy volunteers, were able to stain the uvula, anterior pillars of the fauces, and the tonsils and tonsillar fossae satisfactorily, but were unable to stain the posterior pharyngeal wall. These experiments gave some measure of support to the belief that when pastilles are allowed to dissolve in the mouth the therapeutic substance incorporated in them would reach the fauces and tonsillar areas. Treatment by pastilles, however, tends to be irregular during the day and necessarily ceases during sleep. State and Hart-Mercer (1945) in their work on acute ulcerative gingivitis found a distinct inverse correlation between the length of time penicillin persisted in effective concentration in the saliva after local application and the length of time elapsing before clinical cure. To overcome these difficulties penicillin has been administered by means of a continuous drip into the mouth, thus providing continuous contact between the penicillin and the infected tissues throughout the 24 hours.

The method previously described by Royston and Deverell (1945) had originally been used on about 70 patients. A further 20 have now been treated.

Method

The apparatus is quite simple (see Diagram), consisting of a standard drip-transfusion set, with the needle replaced by a piece of soft thin rubber tubing 8 in. (20 cm.) long bent into the form of a J on a piece of dental wire in its lumen. The tubing is led into the mouth with the short limb of the J lying in the bucco-gingival sulcus and the long limb lying along the outside of the cheek, to which it is attached by a piece of strapping. The delivery tubing is then led over the side of the nose to the forehead and thence to the bottle suspended over the head of the bed. This arrangement enables the patient to lie comfortably on either side and to turn over in bed without disturbing the tubing, thus not interfering with sleep. The solution used is made up from the impure calcium penicillin normally used for application to the skin, to contain 50,000 units to 1 pint (568 ml.) of normal or half-normal saline. The drip rate is adjusted to deliver 1 pint of the solution in 24 hours.

Patients tolerated the drip well and, except for two, did not find it interfered with sleep. A few were conscious of having to swallow more often than usual, but not to an uncomfortable degree, and while they were asleep the solution trickled down the pharynx, there being no leakage on to the pillow. Only one patient complained of nausea. There was no need to remove the drip while eating or drinking, and the patients were instructed not to remove the tube from the mouth except when cleaning the teeth.

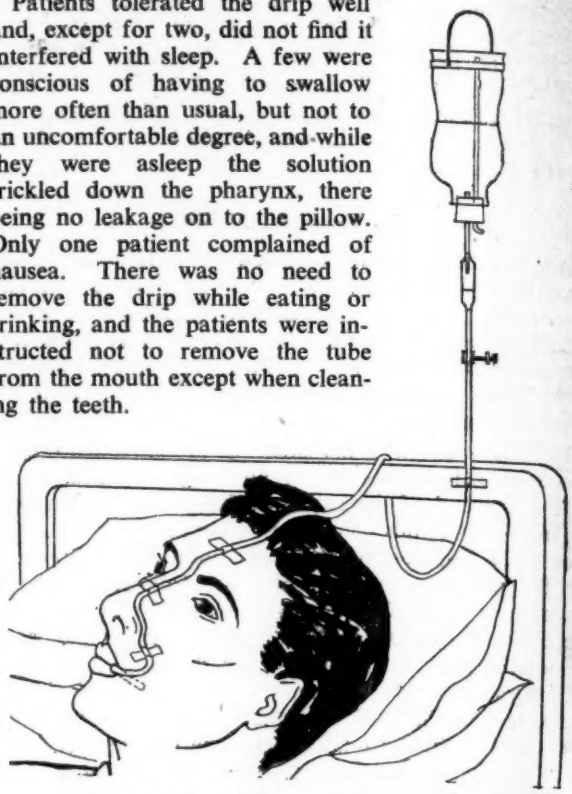

Diagram showing the apparatus in position.

Results

It is not intended to discuss the clinical results in detail, because adequate control, notoriously difficult from both the clinical and the bacteriological standpoint, was not carried out. Certain clinical impressions were definite enough to warrant description.

1. Patients liked the treatment and stated that should they have a recurrence of their trouble they would prefer to have it again.

2. Patients suffering from infection of the tonsils and fauces by Vincent's organisms (18 cases) responded well, losing their pain and the foul taste in their mouths. This subjective improvement was well marked within six hours of beginning the drip, and compared favourably with 13 cases of similar severity treated by local applications of a weak solution of iodine and by gargles.

3. Two patients with glandular fever of anginous type and six with acute tonsillitis, peritonsillar swelling, oedema, and gross dysphagia who could scarcely articulate were made more comfortable within a few hours and enabled to get a good night's sleep.

4. Diphtheria carriers of three weeks' duration (seven cases) were rendered swab-negative after 72 hours of the drip, but all became swab-positive again within three days of cessation of treatment.

Conclusions

It was noted that about a quarter of the patients developed a dark-brown fur on their tongues, associated in some cases with a metallic taste and in others with headache. No other toxic symptoms were observed. This is of interest, as Bedford (1946), Ellinger and Shattock (1946), and MacGregor (1947) have reported a similar condition of the tongue when using penicillin pastilles, but in their cases there were no

symptoms associated with the tongue lesion. Mutch (1947) found it also when using inhalations of a nebulized aqueous solution of penicillin. The pastille base has been blamed for the condition. In my cases, however, the only vehicle used was saline, and still the black tongue developed. I tried the method on myself and developed a typical tongue after running the drip for three successive nights (a total of 50,000 units of penicillin), but failed to produce any such change with saline alone. This suggests that penicillin itself, or some contained impurity, is responsible and may act by causing an alteration to the normal flora of the mouth.

I think this method of applying penicillin has a place in the treatment of faucial infections caused by Vincent's organisms and in certain other severe throat infections, including the first day or two of severe faucial diphtheria. Also, it may well be applicable to surgical conditions of the throat.

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Medical Memoranda

Impaction of Gentian Pill in Larynx of Child Aged 2

The following case is of interest in that the ability of a child of 2 years to swallow either an enteric-coated capsule or an oval pill is difficult to assess, but there is certainly a danger, since the reflexes controlling deglutition are imperfectly developed at this age.

CASE HISTORY

A child aged 2 years was being treated with gentian violet pills for threadworms. On the evening of Dec. 20, 1946, she put a pill into her mouth and was then given a drink of milk, which was swallowed successfully. She was then given a piece of bread, but began to choke and became cyanosed and her breathing stertorous. Attempts to make her sick by placing a finger down her throat were unsuccessful. The father immediately carried the child to the doctor, who lived on the opposite side of the road. On arrival the child's breathing had ceased and the pulse could not be felt at the wrist. The doctor laid the child on a table and started artificial respiration, having previously smacked her back to try to dislodge the pill. Breathing restarted after about 30 seconds and was accompanied by a good deal of stridor. By the time the child reached hospital (accompanied by the doctor) the breathing was normal apart from a stridor. Cyanosis was present but not pronounced.

On admission to hospital the patient was suffering from stridor and cyanosis, and at each respiration the pill could be heard rattling in the larynx as it moved upwards and downwards. The child was taken to the operating theatre and chloroform anaesthesia was administered. By use of a direct laryngoscope the pill was seen to be travelling up and down the inside of the larynx between the cricoid and the true cords at inspiration and expiration. At expiration the pill could be clearly seen lying between the two cords. The pill was grasped from above with a pair of foreign-body forceps, but could not be pulled through the cords as these went into spasm directly they were irritated, and it was found impossible to remove the foreign body from above without damaging the cords. Tracheotomy was then performed, but the pill could not be removed from below, owing to its impaction in the cricoid ring. The question then arose whether a laryngofissure should be performed, but it was decided to try to push the pill from above through the cricoid ring to the tracheotomy opening. This was successful and the pill was removed. The tracheotomy tube was left in position for twenty-four hours and the patient was given 30,000 units of penicillin at once and 15,000 units three-hourly. After another twenty-four hours the tube was removed and the patient made an uninterrupted recovery.

COMMENTS

In your issue of Dec. 21, 1946 (p. 973), the reply to a query in the "Any Questions?" column in respect of threadworm therapy for a child of 2 years ran thus: "The best drug to date is gentian violet. It is given in enteric-coated capsules, the dose being 1/6 gr. (11 mg.) per year of apparent age, for each day for about a week."

The above case illustrates that there is a certain danger in giving a large capsule or pill to young children until the swallowing reflex is well developed, since it may be inhaled or forced through the cords, as may have happened in this case, and so cause laryngeal occlusion and immediate death. If the pill had not been oval in shape the larynx would have been completely occluded and death would have resulted. By smacking the child's back the doctor had dislodged the pill from lying with the long axis in the horizontal plane. This allowed air to pass the pill as it lay with the long axis in the antero-posterior plane and enabled enough air to pass into the lungs to keep the child alive.

S. W. G. HARGROVE, M.B., B.Chir., F.R.C.S.Ed., D.L.O.Eng.,
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Eye, Ear, and Throat Hospital for Shropshire and Mid-Wales.

Expectoration of Shell Fragment after 29 Years

The long interval between the injury and the expectoration of the shell fragment in the following case is of considerable interest, but no support for the "conservative" treatment of foreign bodies in the lungs is inferred.

CASE HISTORY

A soldier aged 18, while standing at the entrance of a dug-out in 1917, was hit by a fragment of metal from a high-explosive shell which dropped on a near-by road. The fragment entered his chest in the second left intercostal space, 2 in. (5 cm.) from the sternum; there was no point of exit. The site of entry healed in two weeks, but a left empyema developed which was satisfactorily cured by rib resection a month after the injury.

He was subsequently quite well, apart from a slight cough with up to 1/2 oz. (14 ml.) of inoffensive sputum daily, until 1932, when he had a haemoptysis of 5 oz. (142 ml.). After this, haemoptyses of not more than 1 dr. (3.5 ml.) occurred every month or two. In 1937, on his first visit to the Brompton Hospital, a radiograph showed a fragment of metal in the lower part of the left hilum, with some surrounding fibrosis; bronchograms revealed a filling defect of the bronchus to the lingular process just below its point of origin and adjacent to the fragment, all other bronchi being normal.

In April, 1946, he developed a sharp pain between the scapulae, particularly on coughing, which steadily became more severe for three days and terminated with the expectoration of the fragment, which measured 1.7 by 1 cm., together with a haemoptysis of 1/2 oz.

During the past year he has remained perfectly well; his sputum has never been more than a trace daily, and it has contained a streak of blood on two occasions only. Radiographs show no change compared with 1937, except that the shell fragment is no longer visible; bronchograms were not repeated owing to his sensitivity to iodine.

My thanks are due to Dr. F. H. Young for permission to publish.

NEVILLE OSWALD, M.D., F.R.C.P.

Breast-Feeding is an instructive little pamphlet obtainable from the National Association of Maternity and Child Welfare Centres, 5, Tavistock Place, London, W.C.1 (price 2d. or 1s. 9d. per doz.), which explains to mothers in simple terms the importance and technique of breast-feeding, care of the breast, test weighing, and weaning.

Reviews

EAR, NOSE, AND THROAT

Lehrbuch der Hals- Nasen- Ohren- und Mundkrankheiten. By A. Barraud (Lausanne), F. R. Nager (Zürich), L. Rüedi (Berne), E. Schlittler (Samaden) and J. P. Taillens (Lausanne), with the collaboration of E. Barbey (Geneva), F. Escher (Berne), E. Hanhart (Zürich), R. Luchsinger (Zürich), A. Montandon (Geneva) and W. Racine (Neuenburg). (Pp. 609; illustrated. 60 Swiss francs.) Basle: Verlag von S. Karger.

All the teaching schools of Switzerland have contributed to the production of this textbook of diseases of the throat, nose, ear, and mouth. The production is excellent, particularly the illustrations, which include many clear line drawings. The skiagraph of the petrous pyramid in Stenver's position, though rather small, is particularly fine. The authors omit padding and discuss important emergencies and common diseases with common sense—for example, the section on tracheotomy. It is strange to us in Britain to see intubation discussed in detail, for we have always preferred tracheotomy. Accounts of rare diseases are appropriately included in small print.

Interesting and practical additions to the usual text of an E.N.T. book are the sections on hearing aids, speech therapy, the teaching of lip reading, and schools for the deaf. The profile sketches of noses of different races and types are amusing—and indeed important to the plastic surgeon. Plastic surgery of the nose and surrounding structures is not considered, however. The account of the signs in the mouth, pharynx, and larynx of the acute infectious fevers is most helpful. Routine histological examination of tonsils for tuberculosis is advocated—a procedure that would not find favour in Britain, at least not among the overworked laboratory staff. Typical of the authors' sensible approach is the reference to the indications for removal of tonsils and adenoids: "The indication for adenoidectomy is absolute; that for tonsillectomy is relative." They discuss simple infections of the larynx briefly and pointedly, omitting useless data traditionally handed down from one textbook to another. Rüedi, in his description of paralysis of the vocal cord, discusses an important discrepancy in Semon's law and explains how this occurs. The complicated paralyses of the cranial nerves in relation to lesions in the region of the jugular foramen are neatly clarified. Histological section of all benign vocal cord tumours after removal, even in children, is rightly advocated. This is an excellent reference book for a house-man beginning a study of E.N.T. diseases, or postgraduate student pursuing more advanced study, provided he can read German.

STEPHEN SUGGIT.

RENAL TUBERCULOSIS

La Tuberculose Rénale sous l'angle de la thérapeutique. By Jean Cibert. (Pp. 533; illustrated. 1,150 francs.) Paris: Masson and Cie. 1946.

Renal tuberculosis has provided more pathological and clinical problems than any other disease of the urinary tract. A book written by Jean Cibert, based upon a thousand cases treated by him between 1928 and 1944, must be a valuable contribution to the literature. He has divided his book into three sections. In the first part he discusses the pathological, anatomical, and clinical basis upon which treatment is founded; in the second he describes the medical and surgical treatment; and in the final section he gives the indications for the treatment of unilateral and bilateral renal tuberculosis and for the treatment of bladder involvement persisting after nephrectomy. By confining the scope of this work mainly to the treatment of this disease the author has been able to consider more fully those problems that are constantly presented to the clinician. When discussing controversial matters, such as the route by which the organism reaches the kidney, the site of the initial lesion, or tuberculous bacilluria, the author widely reviews the experimental and clinical literature and gives a large number of references.

He gives a full pathological description of the changes in the kidney from the initial lesion to its final and complete destruction, and especially considers the modifications of treatment requisite to each stage. Tuberculous infection extending to the rest of the urinary and genital tracts greatly affects the treatment of the disease; the author deals fully with such complications. A large number of excellent pyelograms are reproduced with the discussion on diagnosis and on ascertaining the extent of the disease, and he carefully describes the characteristic changes which occur at each stage of the infection. He deals with the medical treatment of renal tuberculosis concisely under the headings of general, specific (biological and chemical), and palliative methods of treatment. The results of vaccine and chemical treatment are described in a separate section—the vaccine of Vaudremer and the antigen of Nègre and Boquet more fully than tuberculin. The surgical treatment is divided into two parts: first, the radical treatment of nephrectomy; secondly, palliative operations. He pays special attention to the technique of nephrectomy, the treatment of the ureter, vascular pedicle, perinephric fat, and drainage, and the post-operative complications which may follow nephrectomy. In the section on palliative operations the author describes the details and technique of many operations that have been devised to relieve the patient of discomfort and which often receive only a brief mention in textbooks. His account of those operations which aim at interrupting the painful nerve impulses by injecting or resecting various parts of the nerve supply of the bladder is especially clear. The indications for nephrostomy, ureterostomy, and cystostomy, and the complications which may occur from such measures, complete this very instructive chapter. In the final section he discusses the indications and contraindications for treatment of unilateral and bilateral kidney lesions, and it is here that the author deals with such difficult decisions as whether to remove one of the kidneys in a bilateral involvement and other similar problems.

This book is a fine contribution to the literature on renal tuberculosis. It is to be hoped that it will be translated into English so that it may be more widely read.

J. E. SEMPLE.

ALCOHOLICS ANONYMOUS

Phases in the Drinking History of Alcoholics. Analysis of a Survey Conducted by the 'Grapevine,' Official Organ of Alcoholics Anonymous. By E. M. Jellinek, Sc.D. Memoirs of the Section of Studies on Alcohol, Yale University, No. 5. (Pp. 88. $1.00.) Published for the Section of Studies on Alcohol by Hillhouse Press, New Haven, Connecticut. 1946.

This little book may not be everyone's leisure-time reading, for it is packed with statistical figures and statistical arguments, but students of alcoholism will find much of interest in it. Dr. Jellinek sifts the material with a skill that commands admiration, distinguishing those attitudes and modes of behaviour which are significant for prognosis from those which are not.

The investigation suffers from the severe defect that neither Dr. Jellinek nor anyone with statistical experience planned it. Facts of primary importance, such as family and personal background, were neglected; those recorded were obtained from answers to a questionary given away with copies of the *Grapevine*, the official organ of "Alcoholics Anonymous." The replies were from reformed alcoholics of predominantly superior social and economic standing. Dr. Jellinek was asked to analyse the questionary returns, which provided a series of dates for each individual—those, for instance, of first getting drunk, attempting to control drinking by changing the drinking pattern, going on the wagon, the first black-out, the first week-end drunk, the first mid-week drunk, the first loss of a job, and so forth. By grouping these 36 separate dates Dr. Jellinek shows that the drinking history can be divided into three stages. Relatively little is known of the prodromal period. The first clearly established stage, which begins with loss of control of drinking habits, is associated with week-end drunks, "black-outs," "sneaking drinks," and extravagant behaviour. Characteristic of the next stage are "benders"—that is, staying drunk for a day or more without regard to social consequences—going on the water wagon, or changing the drinking pattern. This acute compulsive phase passes gradually into a more chronic one, in which the personality of the alcoholic becomes disorganized; its most characteristic symptoms are a preoccupation with ensuring a regular supply of alcohol and the occurrence of tremors and un-

reasonable fears. Finally, about three years later, the alcoholic reaches his lowest point, where he may at last admit to himself or to others that his alcoholism is beyond control, signifying the defeat of his systems of rationalization. "Alcoholics Anonymous," remarks Dr. Jellinek, "are right in attributing great significance to this self-admission, because as long as the rationalization system affords sufficient support the drinker cannot sincerely feel that he has a disease which requires treatment."

ELIOT SLATER.

PERIARTERITIS NODOSA

La Périartérite Noueuse. Maladie de Kussmaul. By P. Nicaud. (Pp. 122; 21 figures. 255 francs.) Paris: Masson et Cie.

In this monograph on periarteritis nodosa Dr. P. Nicaud gives a detailed account of the clinical and pathological aspects of the disease. He writes authoritatively, for he has himself been interested in the subject for nearly twenty years. The book is for the most part based on carefully selected reports from the literature, beginning with the original account published by Kussmaul in 1866. The first part is in the best tradition of clinical descriptive writing, in which the greatest French teachers have rarely been excelled. The author distinguishes acute and chronic forms of the disease, which, while they resemble each other in their symptoms, differ greatly in their evolution, the one proceeding rapidly by a series of dramatic episodes to death, the other being characterized by long remissions interrupting the varied course of the illness, which may end in recovery. The vascular lesions are widespread, but the symptoms may predominantly arise from one particular system of the body; the author therefore distinguishes haemorrhagic, nervous, alimentary, and cardiac forms, in all of which disseminated lesions may complicate the picture. Cases with purely visceral manifestations are sufficiently common to be separately described. Only the brain and the lungs seem usually to be spared from the morbid process. The author carefully describes the lesions themselves, both their gross and microscopical features and their evolution from a purely adventitial lesion to a pan-arteritis.

The theme of the book is the natural history of the nodule that gives the disease its name. It may be seen in the skin, the mucosae, the various viscera, and on sigmoidoscopy as tiny "tapioca granules" lying along the course of the small vessels. Wherever they occur the appearance and development of the lesions are the same, but the pathological effects are as varied as the functions of the organs in which they arise. The author says nothing new on the problem of the aetiology of the disease. He reviews the experimental work on its transmission to animals, the results of which have been largely negative. A similar condition has been described arising spontaneously in deer, as well as in the pig and the calf, and the author believes that the disease is likely to be caused by an infection, possibly entering by the alimentary canal, where the lesions are most common. He pays scant attention to Rich's work, which suggests an allergic cause of the disease. It may be assumed that Selye's work was not available to the author when he wrote the book.

It is a fault of French reviews that theories based on speculation receive the same emphasis as serious experimental work, but this book is freer from it than most. Sections of the book on prognosis, diagnosis, and treatment only recapitulate points made earlier and include much repetition. The book is well produced; the illustrations are useful, particularly the colour reproductions of the cutaneous lesions; misprints are few, and the bibliography is adequate, though not exhaustive.

L. P. R. FOURMAN.

Médicaments et Médications, by Hervé Harant (Paris: Presses Universitaires de France; no price given), is an elementary introduction to pharmacy. It begins with a brief résumé of the history of pharmacy, defines terms in common usage such as therapeutics, pharmacognosy, etc., and surveys the natural and chemical origins of drugs often prescribed, their method of administration, actions, and uses. It concludes with a short chapter on physiotherapy and radiotherapy, and a bibliography taken mainly from books in the same series—*Que Sais-je?* This book is one of an elementary educational series covering many subjects.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Psychopathology. By J. Ernest Nicole, O.B.E., L.M.S.S.A., D.P.M.R.C.P.&S. 4th ed. (Pp. 268. 15s.) London: Baillière, Tindall and Cox. 1946.

An exposition of modern theories of psychopathology.

Secretarial Practice and Office Administration for Hospitals. By Capt. J. E. Stone, C.B.E., *M.C.*, F.S.A.A., F.R.Econ.S., F.S.S., F.H.A. (Pp. 204. 21s.) London: Faber and Faber. 1947.

A guide to the routine of office management in hospitals.

Atlas of Cardiovascular Diseases. By I. J. Treiger, M.D. (Pp. 180. 50s.) London: Henry Kimpton. 1947.

Illustrations, some in colour, show diseased organs of the cardiovascular system, skiagrams, and electrocardiographs; summarized case histories included.

The Advertisers' Aid, 1947 (No price.) London: The Newspaper Society. 1947.

Provides information for newspaper advertisers.

Surgery of the Ear. Renewal pages. Edited by S. J. Kopetzky, M.D., F.A.C.S. New York and London: Thomas Nelson. 1947.

Includes chapters on surgery of the external ear, chronic otorrhoea, brain abscess, the facial and acoustic nerves, and plastic surgery.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart. 11th ed. Revised by Lambert Rogers, M.Sc., F.R.C.S., F.R.C.S.Ed. (Pp. 560. 20s.) London: Cassell and Co. 1947.

This popular manual has been completely revised for this edition.

The Rehabilitation of the Injured. Vol. 2. By J. H. C. Colson, M.C.S.P. (Pp. 556. 30s.) London: Cassell and Co. 1947.

A textbook on the application of specific remedial exercises, intended for physiotherapists and remedial gymnasts.

Man and Animals: What They Eat and Why. By Ben Dawes, D.Sc., A.R.C.Sc. (Pp. 100. 7s. 6d.) London, Longmans, Green and Co. 1947.

A brief account of the chemical constitution of food for students of biology and nutrition.

Sigmund Freud: An Introduction. By Walter Hollitscher, D.Phil. (Pp. 119. 8s. 6d.) London: Kegan Paul, Trench, Trubner and Co. 1947.

An outline of Freud's theories and their significance to sociology.

Opportunity and the Deaf Child. By I. R. Ewing, O.B.E., M.Sc., and A. W. G. Ewing, Ph.D., M.A. (Pp. 252. 9s. 6d.) London: University of London Press. 1947.

The education of deaf children described for medical men and laymen.

What People Are. By Clark W. Heath. (Pp. 141. $2 or 11s. 6d.) Cambridge, Mass: Harvard University Press. London: Geoffrey Cumberlege, Oxford, Oxford University Press. 1946.

Records investigations into the physique and mentality of a number of "normal" young men.

Hey Groves' Synopsis of Surgery. Edited by Sir Cecil P. G. Wakeley, K.B.E., C.B., D.Sc., F.R.C.S., F.R.S.Ed. 13th ed. (Pp. 637. 25s.) Bristol: John Wright. London: Simpkin Marshall (1941), Ltd. 1947.

Includes new material on vascular surgery, chest surgery, neurosurgery, and the surgery of the ductless glands.

Dental Education Today. By H. H. Horner. (Pp. 420. 33s.) Chicago: The University of Chicago Press. London: Cambridge University Press. 1947.

A systematic account of education for the dental profession in the U.S.A.

Preoperative and Postoperative Care. By W. J. Tourish, M.D., F.A.C.S., and F. B. Wagner, Jr., M.D. (Pp. 338. $6.00 or 33s.) Philadelphia: F. A. Davis Company. London: H. K. Lewis. 1947.

An introductory manual on the care of patients before and after operation.

BRITISH MEDICAL JOURNAL

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CHILDREN'S DIETS

A considerable number of surveys have been made of the amount of food eaten by families, though we still have much to learn about the variations according to income, employment, and locality. But very little is known about the amounts eaten by individuals. In this country we have had the studies of the diets of middle-class adults, and of pregnant women made more than ten years ago by Widdowson[1 2 3] and her colleagues, and more recently Bransby and Wagner[4] have investigated the diets of school-children in industrial towns, but we have no information about the diets of children under 5 or of adolescents. Yet information about the amounts of food eaten at various ages has more than an academic value, for the Governments of most countries in which food has been rationed have graduated the rations according to age, though they have had no firm knowledge of the variations of food-consumption with age.

Widdowson[5] began to investigate the diets of children in May, 1935, and went on collecting data until May, 1939. The 916 children studied included 333 of the "professional class," 474 of the "upper working class" (accountants, bank clerks, shopkeepers, and the like), and 109 of the "artisan class" (fitters, skilled labourers, lorry drivers, factory hands). The method used was the same as that employed in studies of the diets of adults. A spring balance, weighing by 1/4-oz. (7-g.) divisions up to 2 lb. (907 g.), was provided, with a sheet of instructions and a set of forms on which to enter the results. The food as served was weighed, and any edible portion, but not waste, that was not eaten was deducted. The record was kept for a week. All methods of surveying food-consumption have their faults. When the housewife keeps a record of food bought and eaten the inaccuracy of the weighing provides the highest and the change from the normal pattern of the family's diet the lowest source of error. When an investigator comes into the house and weighs all the food eaten and all the waste, the weighing is accurate, but there is a change in the food pattern. With the method used by Widdowson the accuracy of weighing is intermediate, but there is still some likelihood that the diets of the subjects are modified for the occasion. Mothers may, unconsciously, avoid what they consider may be faults and aim at a desirable diet, and the children, knowing that their performance will make dietetic history, may set out to show what they can do. The amount of food eaten may vary enormously during the week. One child consumed the equivalent of 4,226 calories on Sunday and 2,619 calories on Friday. It may be asked whether a week is sufficiently long to give an estimate of the average consumption by an individual. Four children weighed their week's food twice at intervals of about one year. The difference between the two weeks ranged from 62 to 275 calories. Widdowson also quotes the calorie intakes of 8 children studied each week for four weeks. The maximum differences between the average intake of an individual over the four weeks and the average of the same individual during any one week were +258 and −218 calories.

Our first reaction to this study is to compare the food eaten before the war with the food to-day. Few families in the classes studied can get more than their ration of any foodstuffs, except eggs. The average amount of milk taken by children up to the age of 12 before the war was about 6 pints (3.4 l.) a week; children supplied with milk at school now get about 5 pints (2.8 l.). Boys over 12 used to drink about 5 pints; adolescents now get only 3.5 pints (2 l.) unless they get milk at school. The average amount of butter eaten on bread by children over 5 was more than 6 oz. (170 g.) a week, and boys of 16 ate as much as 10 oz. (284 g.). The average amount of meat eaten by children over 9 years old was not less than 20 oz. (568 g.) a week, and boys over the age of 14 ate about 40 oz. (1.1 kg.); three-quarters of this was butcher's meat. To-day a child eating school meals is allowed about 24 oz. (682 g.) of butcher's meat. Children from 6 to 11 years old ate from 2 to 3 oz. (57–85 g.) of bacon, and those over 12 ate 4 oz. (114 g.) or more. The average amount of raw fruit eaten was between 20 and 30 oz. (568–852 g.) a week, but the average amount of cooked green vegetables was little more than 1 oz. (28 g.) a day up to 16 years, and then about 1½ oz. (42 g.). Comparison of the pre-war intake of calories, which was over 2,000 a day for children aged from 7 to 13 years and over 3,000 for those aged from 14 to 18 years, with estimates made by Bransby and Magee[6] of the amounts obtainable from rationed foods and other sources, shows that it is difficult to maintain this pre-war level unless children eat meals away from home.

There is another side to the picture. In 1944–5, before bread was rationed, Bransby and Wagner[4] surveyed the diets of children aged 5 to 13 years attending elementary schools in Stoke-on-Trent and in Salford. These children must have come from families that were poorer than most of those included in Widdowson's 1935–9 survey, but the average calorie values of their diets in 1944–5 were as high as those of Widdowson's 1935–9 group. The average amount of milk consumed was equivalent to about 5 pints (2.8 l.) a week. The average daily calcium was higher than in the 1935–9 survey. The amount of animal protein in 1944–5 was only a few grammes a day less than in 1935–9 and, even more remarkable, the amount of fat was not much less. Widdowson also studied the diets of children whose fathers were unemployed; in their diets the average amounts of milk, of animal protein, and of calcium were well below those in the diets of 1944–5. Since 1939 the diets of middle-class children have deteriorated, but those of the poorer classes have improved considerably.

[1] *J. Hyg.*, Camb., 1936, **36**, 269.
[2] Ibid., 1936, **36**, 293.
[3] Ibid., 1938, **38**, 596.
[4] *British Medical Journal*, 1945, **2**, 682.
[5] "A Study of Individual Children's Diets," 1947. Med. Res. Cncl. Sp. Rep. Ser., No. 257. London: H.M.S.O.
[6] *British Medical Journal*, 1947, **1**, 525.

Among the children studied in 1935–9 differences between the calorie intakes of individuals of the same age were as great as or greater than those found among adults. These differences among adults cannot be accounted for by variations in the intake of an individual from week to week, differences in basal metabolic rates, differences of physical work, or differences in the specific dynamic action of foodstuffs. As a rule bigger children ate more food, but the differences in size would not account for the differences in the amount eaten by individual children. However, the average consumption of protein and the average calorie values of the diets, age by age, corresponded very closely with the requirements proposed by the National Research Council of the U.S.A.[7] The calcium available was, throughout, below this standard.

What do these estimates of requirements mean, in view of the wide range of intakes which seem to be compatible with health and with an average rate of growth? Widdowson considers this question at some length. The average heights and weights of these children were close to those arrived at by Baldwin and Wood.[8] The levels of haemoglobin in the blood of those children examined compared favourably with haemoglobin levels estimated elsewhere. It is highly probable that the diets which the older children were eating in 1935–9 were similar to those that they had eaten in early childhood. But children with a small appetite might be big and children with a large appetite small; children taking over 1 g. of calcium a day might have very bad teeth and children taking under 0.5 g. have relatively good teeth. An average diet of the type eaten by these children was compatible with a good average standard of growth, a fair haemoglobin level, and very bad teeth. But how the physique, haemoglobin levels, or state of the teeth could be improved by changes in the diet we do not know.

HEALTH SERVICES BILL FOR NORTHERN IRELAND

Like its prototype for England and Wales, this Bill is designed to provide a free comprehensive health service. The Ministry of Health and Local Government is given general responsibility for the organization of the Service and it will secure this partly through certain new agencies and partly by the reorganization and co-ordination of existing services. The Bill does not provide for the appointment of a permanent statutory advisory body corresponding to the Central Health Services Council, but the Minister is empowered to set up health advisory committees for the purpose of obtaining advice upon any matters arising in connexion with the duties of the Ministry. These will be *ad hoc* bodies appointed, and dissolved, by the Minister when, and for what particular purpose, he pleases.

Under Part II of the proposed Act a General Health Services Board is given the duty of making arrangements for general medical, dental, and pharmaceutical services throughout Northern Ireland. Regulations to be made later will define the personal medical services to be provided, but it is clear from the Bill that no direction, positive or negative, of general practitioners is contemplated. The Board is required in performing its functions to consult with local representative committees of doctors, dentists, and pharmacists "to such extent as appears to the Board to be practicable." These local medical, dental, and pharmaceutical committees may be formed for the area of any health authority (counties and county boroughs). The Board will be appointed by the Minister after consultation with the various interests concerned—the medical, dental, and pharmaceutical professions, the hospital services, the county and county borough health authorities, and other organizations. Any medical practitioner resident in Northern Ireland will have the right to have his name included in the list of any local medical committee area. In brief, he may practise where he chooses.

The principle of remuneration by capitation fee has been embodied in the Bill. Therefore, a general practitioner's income from the Service will depend upon the number of persons who select him as their doctor. For areas where by reason of the small population the capitation fee provides remuneration which, in the opinion of the Board, is inadequate, the Bill authorizes additional remuneration. Superannuation benefits are also to be provided.

Although the buying and selling of the goodwill of public practices is to be prohibited and compensation is to be paid to those who enter the Service, as in the case of the English Act, the detailed penal provisions of the latter, which have caused such bewilderment and apprehension, do not appear in the Northern Ireland Bill. The numerous complicated penal clauses of the English Act are replaced in this Bill by a simple paragraph, that it shall be unlawful to sell the goodwill of the practice of a general practitioner who enters the Service, followed by a statement of the penalties for offences. The Bill authorizes the maintenance of lists of general practitioners who will undertake to provide medical assistance for midwives. On this point the English Act includes a provision enabling the Minister of Health to prescribe conditions as to the qualifications of medical practitioners called in to assist midwives. A special tribunal is to be set up to investigate cases where representations are made that the continued inclusion of any doctor, chemist, dentist, or optician in the lists drawn up under the Act would be prejudicial to the efficiency of the Service. There is an appeal from decisions of this tribunal not to the Minister but to the Supreme Court.

A hospitals authority will be set up by the Minister to survey, plan, and administer the new hospital and specialist services; its functions will include, by arrangement with the Queen's University of Belfast, the provision of facilities for clinical teaching and for research. Members of the hospitals authority, to which all existing hospitals are to be transferred, will be appointed by the Minister after consultation with the universities, the medical profession, the Northern Ireland Tuberculosis Authority, the county and county borough health authorities, and the rate-aided and voluntary hospitals. The actual management of hospitals will remain in the hands of local management committees. One of the first tasks of the new authority will be to submit to the Ministry a general scheme for the appointment of management committees for each hospital or group of hospitals. The authority will appoint the management committees after consultation with the health authority for the area, with the General Health Services Board, with the senior medical and dental staff of the hospital, and with

[7] National Research Council (1943). Reprint and Circular Series, No. 115. Washington, D.C.
[8] *Weight-height-age Tables for Boys and Girls of School Age* (1923). New York: American Child Health Association.

any other organizations concerned. The Bill provides that at least a majority of the new management committee must be chosen from the members of the existing committee or board of governors. Management committees will act in their own right within the schemes approved by the Ministry, and will have full legal status and power to accept gifts. The endowments of voluntary hospitals will be transferred to the new management committees. A Hospital Endowments Commission will determine whether the endowments of a voluntary hospital are "general" and therefore available for general purposes, or "special" and therefore to be applied to a specific purpose.

Finally, every county and county borough council is required to submit to the Ministry a scheme for the provision in their areas of the following services: maternity and child welfare, health visiting, home nursing, vaccination and immunization, and health education. These local authorities are also empowered, with the Ministry's approval, to make arrangements for ambulance services, for the prevention of illness, for the care or after-care of persons suffering from illness, and for domestic help in cases of illness. The provision of health centres is not included in the duties of the local health authorities but is the function of the General Health Services Board, the body responsible for the general practitioner service. The board may, however, delegate its duties in this respect to a local health authority.

ON THE TRACK OF DISSEMINATED SCLEROSIS

Disseminated sclerosis is by far the most common demyelinating disease of the central nervous system. Indeed it is the commonest disease arising within the brain and spinal cord and causing structural changes in them. Its aetiology remains unknown in spite of many attempts to explain its lesions on the basis of vascular degeneration, virus infection, organic or inorganic toxins, or deficiencies of essential substances in the food. Certain features suggest a familial defect; cases have occurred in two or more siblings, and the condition has been described in uniovular twins. Some neurologists have held that two factors are responsible, one inborn and the other acquired, but they have been unable to hazard a guess as to their nature.

Chance has now thrown up an entirely new approach to the problem and one which may open the way to a complete understanding of the cause of disseminated sclerosis and perhaps to its prevention and even cure. Four members of a group of seven laboratory workers who, led by Innes,[1] were studying the aetiology of swayback in sheep have developed disseminated sclerosis. Russell and his collaborators[2] have described the four cases, and there can be little doubt—in a condition where doubt is so often justified—that the cases are clinically characteristic examples of the disease. As over half the workers have been so affected the probability that the affliction is related to a common environmental factor experienced by them all is great, and it seems reasonable in the circumstances to incriminate their common interest in swayback.

Swayback is a most interesting condition. It occurs in newly born lambs with healthy mothers, and it will affect both twins or all three triplets. The affected lambs become progressively ataxic and spastic and then die. Their mothers have lived in an "affected" area for at least a year before their birth, and in many discrete areas of country, particularly in Derbyshire, Yorkshire, Buckinghamshire, and Wales, the incidence is very high. A similar disease is found in Australia, South America, and New Zealand. Innes showed that swayback resembles Schilder's encephalopathy in its gross pathological appearance and is not like disseminated sclerosis at all, for though demyelination is seen it is widespread through the cerebral hemispheres; large patches of symmetrical degeneration occur and lead to gross enlargement of the cerebral ventricles and to extensive cavitation of the brain.

No one has been able to transmit swayback from one lamb to another, or to any other animal, but Bennetts and Chapman[3] found that the administration of copper to the ewes during pregnancy prevented the disease. This is not the whole story, however, for swayback has been observed in areas where the copper content of the grass is adequate, so that some other set of factors must also be operative. Although perivascular zones of demyelination occur in the brain, brain stem, and cord in disseminated sclerosis, similar demyelinating lesions can be caused by many agents, according to Hurst,[4] and none has so far been found to be responsible for the lesions of disseminated sclerosis. Now the possibility has arisen that a deficiency of a trace metal in the mother may predispose the subject to exposure to some other agent in life, which in turn may give rise to perivascular demyelination. The administration of copper to the cases of disseminated sclerosis has been without benefit, but this, on the face of it, was perhaps hoping for too much. At least it looks as if the search has begun to narrow down.

SOME FACTS ABOUT CHILD-BEARING

The economic and general aspects of child-bearing have been studied recently by a joint committee of the Royal College of Obstetricians and Gynaecologists and the Population Investigation Committee.[5] Information about the births in England, Wales, and Scotland during the week March 3–9, 1946, was collected by the health visitors of the local authorities eight weeks after the confinement. A questionary was completed by 13,687 of the 15,130 women concerned; 424 local authorities co-operated, and 34 found it impossible to do so. With such a high proportion of successful interviews the results may be taken as typical of present conditions in this country. Legitimate births were classified, according to the occupation of the father, into five broad groups. No information could be obtained for over one-third of the illegitimate births. This probably introduces a bias and therefore the results for unmarried women may not be typical.

More than half of these confinements took place in an institution. For the first births the proportion was 67.8% for all groups, varying in the different occupational classes from 85.2% for the wives of professional or salaried workers to 64.1% for the wives of manual workers. Differences between the occupational groups were more marked for the higher birth orders. Thus, for the fourth and higher birth orders over half the deliveries of wives of professional and salaried workers occurred in an institution, compared with only one-seventh for the wives of agricultural workers. The reasons given for choosing the place of confinement varied. Unsuitable home conditions

[1] *Proc. roy. Soc. Med.*, 1940, **33**, 169.
[2] *Brain*, 1947, **70**, 50.
[3] *Bull. Coun. sci. industr. Res. Aust.*, 1937, No. 147, **13**, 138.
[4] *Brain*, 1944, **67**, 103.
[5] *Population Studies*, No. 1, 99.

accounted for the largest proportion of deliveries in hospital, and for a large proportion of confinements in nursing homes; the proportion of families living more than two to a room ranged from 4.6% for professional workers to 22% for manual workers. Half the women confined at home gave preference as their reason, while in only one-sixth of the hospital (booked public ward) and slightly over one-quarter of the nursing home confinements was this reason recorded. Despite the shortage of hospital accommodation only 13% of the mothers confined at home said that they had been unable to book a bed.

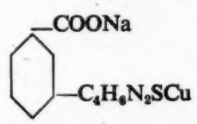
Only 62 women (0.9%) received no antenatal care; 71.7% were under the supervision of local authorities and 27.4% had made private arrangements. The wives of professional and salaried workers sought antenatal care earlier than the other groups (25.5 weeks before delivery), while the wives of agricultural workers had the shortest period of antenatal supervision (20.1 weeks). Domiciliary deliveries were undertaken by a medical practitioner in 19% of cases and by a midwife in 67.6%; for confinements in hospital the proportions were 19.2% and 51.5%, respectively, and in nursing homes 65.4% and 33.9%. Students delivered 28.8% of the hospital cases. Anaesthesia was administered in one-fifth of the deliveries at the mother's home and in nearly three-quarters of the confinements in nursing homes. Chloroform was used in 67.4% of domiciliary and 60.3% of nursing home cases delivered under anaesthesia. In the hospital (public ward) group 69.8% of these cases were given gas and air; in the private wards of hospitals 35.1% had gas and air and 43% chloroform. The average length of stay in hospital varied from 13.4 days for the wives of professional workers to 12.5 days for the wives of manual workers; in nursing homes the corresponding figures for these two groups were 14.6 and 13.7 days.

The number of women who had had a post-natal examination during the eight weeks after delivery was small, probably less than one-third. Only 48% of the mothers having their first child in hospital had had a post-natal examination. The proportion of mothers who sought advice on the welfare of their babies was small: 57.1% had attended an infant welfare clinic and 4.6% had sought other medical advice. Of the wives of manual workers 61.5% had taken their infants to a welfare centre, but only 31.5% of the wives of agricultural workers had attended a clinic. The cost of a confinement varied with parity and economic status. The total average expenditure for a first birth was £39.5, decreasing to £17.6 for the fifth and higher birth orders. The professional classes expended an average of £57 on a first birth compared with £31.3 spent by agricultural workers. Expenditure on medical care formed only a small part of the total cost of a confinement; for first births the average medical and institutional fees were £3.5 for domiciliary confinements, £5.1 for hospitals (booked public ward), and £22.8 for nursing homes. Expenditure on the baby did not differ very much between the five occupational groups, owing to rationing and price controls. For the first birth the largest and smallest mean sums spent on baby clothes were £11.2 and £9.3, and for cots, prams, etc., the range was £14.4 to £9.7.

Most of the differences between the occupational groups are mainly of economic origin, but all the differences may not be solely due to economic reasons, as this report tends to suggest. The fact that the more prosperous mothers had a slightly longer stay in hospital (booked public ward) than the poorer mothers, and that they were given analgesics or anaesthetics more often, may be due to a larger proportion of abnormal confinements in this group. This explanation is suggested by the higher average age of the mothers and the larger proportion of primiparous women. This report adds to the impression gained from medical officers of health that full use is not made of the facilities for post-natal care and infant welfare; over one-third of the mothers had not sought any advice on infant welfare during the most critical weeks following birth.

TREATMENT OF ARTHRITIS WITH SALTS OF COPPER

The beneficial results obtained by the use of gold salts in the treatment of rheumatoid arthritis have led to the action of other heavy metals in this disease being studied, especially in cases intolerant of gold or those in which, after improvement in the earlier courses, the remedy has ceased to benefit. The organic salts of bismuth have given encouraging results, though they are less effective than gold; and antimony has also helped a few cases. Before the war Continental observers had been trying organic salts of copper in the treatment of pulmonary tuberculosis, and, since gold therapy in this disease first led to its being tried in arthritis, Fenz in 1941[1] treated some cases of chronic infective rheumatic disease with an organic copper salt. Some improvement resulted. Forestier in 1942,[2] following this lead, made more extensive investigations, which have recently been published. He used the cuproallyl-thio-urea-benzoate of sodium of the formula:



This substance, which contains 19% of copper, is a yellowish brown powder readily soluble in distilled water. It is administered intravenously, since it was found that intramuscular injection caused painful reactions lasting eight to ten hours. A solution of the strength of 0.25 g. Cu in 10 ml. of distilled water was used, and the treatment began with a dose of 0.1 g. of the salt, which was increased gradually to 0.25 g. A total amount varying from 2.5 g. to 5 g. constituted a course; it was repeated after an interval of one to three months, the injections being given twice a week. No untoward results occurred, and in a series of fifty cases arrest of the disease was recorded in 50%; in a further 30% the effect was encouraging, and in 20% indifferent. The results were especially encouraging in the type of arthritis with marked effusion into the joints, which Forestier inclines to regard as a distinct form of arthritis more resistant to gold than other forms. As with gold therapy the results in spondylitis were less satisfactory than in rheumatoid arthritis.

These observations call for wider investigation of a remedy which seems to afford advantages over gold, being equally beneficial yet without toxic manifestations. It cannot be claimed, however, that the administration of copper is always free from toxic effects, and Forbes[3] has recently discussed those of the inorganic salts; they cause cirrhosis of the liver, which, developing slowly, may show years after the courses given for arthritis have been completed. The whole problem of the action of the heavy metals in the system requires fuller investigation. It would appear to be equally important to investigate the place of the liver functions in arthritis in view of the improvement reported by Hench and others when jaundice has occurred in cases of arthritis.

[1] *Münch. med. Wschr.*, 1941, **88**, 1101.
[2] *Presse méd.*, 1946, **54**, 884.
[3] *British Medical Journal*, 1947, **1**, 367.

INTERNATIONAL CONFERENCE OF PHYSICIANS

(*Continued from p. 431*)

SURGERY OF CONGENITAL HEART DISEASE

The outstanding event of the Conference on Sept. 9 was an all-day discussion on the surgery of congenital heart disease, for which the Sections of Paediatrics and Cardiology combined. The diagnosis and treatment of the cyanotic group was introduced by two workers from the famous Baltimore Clinic—Dr. Helen Taussig and Dr. Alfred Blalock. Dr. Blalock has worked out a technique for the anastomosis of one of the systemic arteries to the pulmonary artery, thereby increasing the circulation to the lungs; in other words, an operation designed virtually to create another ductus.

Dr. Taussig said that in diagnosing the condition of cyanosis a history of squatting on the part of the child was very helpful. These children tended to sit down on their haunches, with their weight on their heels. The cyanosis was of varying degrees; the heart was not greatly enlarged, the basal systolic murmur was characteristic, though a number of the patients had extreme pulmonary stenosis with no murmur, and there were helpful electrocardiographic and especially fluoroscopic signs. Infants were generally less cyanotic than older children. Some might have lips of normal colour and only slight abnormalities of the fingernails, and yet be extremely incapacitated, with an oxygen saturation which fell rapidly during exercise. The degree of incapacity varied from day to day and from season to season. Conditions essential for operation were: (1) inadequacy of circulation to the lungs; (2) availability of systemic arteries; (3) existence of a pulmonary artery to which to anastomose the systemic artery; (4) greater pressure in the systemic artery than in the pulmonary. The greatest concern in the clinical diagnosis was with the structure of the pulmonary artery, and in many children diagnosis was difficult because the pulmonary artery was not very large and the pulsations not easy to detect.

In the first 350 operations which Dr. Blalock had carried out according to this procedure the number of excellent results was 248, or 71%. The deaths numbered 60, cases unimproved 8, much improved 18. In 16 of the cases the operation was exploratory only. Infants stood the operation less well than older children, and children under two were not recommended for operation if there was an even chance of survival. There had not yet been opportunity to answer the question how well the anastomosis would adjust itself to the growing child. Arterial oxygen circulation, which before operation might be 65%, rose post-operatively to perhaps 85%, and was maintained at about that level for the one or two years over which observation had so far extended. Some cases showed cardiac enlargement in the first three weeks after operation, due to adjustment to the altered circulation, and thereafter the size of the heart remained stationary; only 8% showed a progressive cardiac enlargement.

Technique of Arterial Anastomosis

Dr. A. Blalock followed with a colour film illustrating the details of his operation. Anastomosis between the right pulmonary and the right subclavian was favoured. It was possible either to do an end-to-end anastomosis or, as he preferred, an end-to-side; the latter allowed the blood which was to be oxygenated to go to both lungs, and also it permitted with greater safety the performance of further procedures at a later date should this be necessary. The anaesthetic used was cyclopropane throughout. More attention was paid to pressure within the pulmonary artery than to the turns of the vessel. A transverse opening was made in the upper surface of the pulmonary artery of approximately the same size as the opening of the end of the subclavian. Many peculiar anomalies were found. In one case a strand of tissue connected the pulmonary to the carotid and the subclavian; there was apparently no innominate artery. The strand was destroyed and anastomosis carried out between the junction of the carotid and the subclavian and the pulmonary artery, and this patient did very well. Up to now he had carried out the operation in 474 cases, with 86 deaths. The mortality with the various procedures was as follows:

Anastomosis	Cases	Deaths	Per cent
Subclavian and pulmonary artery:			
End to side	331	37	11
End to end	23	4	17
Carotid and pulmonary:			
End to side	30	9	30
End to end	1	1	100
Innominate and pulmonary:			
End to side	47	13	28
End to end	1	1	100
Aorta and pulmonary:			
Side to side	2	1	50
Subclavian artery to pulmonary vein (unintentional)	2	2	100
Exploratory thoracostomy	37	18	49

In not one of the patients in whom the subclavian artery had been ligatured and who had survived the operation had there been any difficulty with the circulation in the arm. Ages of the patients varied from 2 months to 44 years. The ideal age for operation was from 3 to 9 years. Heparin and dicoumarol had been very rarely used; one death was attributable to the latter drug.

The discussion was continued by Dr. James W. Brown (Grimsby), who said that he had had to care for over a hundred cyanotic children; many of them had existed rather than lived. About a quarter managed to survive until school-leaving age. If an extremely bad prognosis was justification for surgery the cyanotic group was a challenge; but operation was not a cure: it was a physiological readjustment which allowed a greater circulation to the lungs.

Patent Ductus Arteriosus and Coarctation

Dr. C. Crafoord (Sweden), who claimed a mortality as low as 1% in the surgery of these conditions, and Dr. Rae Gilchrist (Edinburgh) opened a discussion on this subject. Dr. Gilchrist said that with increasing experience he felt that cases of patent ductus in childhood, with very few exceptions, should be given the benefit of surgery. He would hold his hand until the child had reached the age of 7 or 8, because up to that time it was possible that the ductus might close spontaneously, which he had seen happen in two or three cases. Over the age of 10 the difficulties in the way of thoracic surgery were greater, the technique a little more hazardous, the arteries less resilient, and the mortality from intrathoracic interference increased. He doubted the wisdom of recommending surgery for the young person of 20 or 22 if he or she was not incapacitated; certainly the dangers should be explained to the patient. If a person with patent ductus developed a fever that fever should be watched very carefully, and the possibility of infective endocarditis should be borne in mind. On the results of surgical measures he had nothing but encouragement to report. The mortality in this country and in America was under 5%. The follow-up in Edinburgh had been encouraging also. He read a letter from the schoolmaster of a boy of 13 who had his ductus ligated eight months previously stating that he was an entirely different boy since his operation, that his thrust and resourcefulness were now much more positive and sustained alike in play and work. Another boy in the two years after this operation had gained nearly 20 kg. in weight and 20 cm. in stature, and on the second anniversary of his operation covered seven miles (11.2 km.) on foot in an hour.

Two surgeons—Mr. O. S. Tubbs and Mr. Holmes Sellors—recounted their experience, and Prof. Crighton Bramwell (Manchester) spoke of middle-aged patients with coarctation. In his series there were 13 who were over 30 years of age when they first came under observation. The three oldest were dead, but all had lived to over 50 and had died from conditions unassociated with the defect of the vessels. Of the remaining ten, several were able to undergo severe physical exertion without the production of symptoms. The third decade was the dangerous period because people with good muscular development might be subject to physical strain and women to childbearing.

Dr. Maurice Campbell spoke of blood pressure in cases of coarctation. Sir Thomas Lewis in his classical paper in 1933 had said that there was no rise in blood pressure for a number

of years. In some statistics which Dr. Campbell had collected, relating to children between the ages of 7 and 16, it appeared that on the average the blood pressure rose in these cases from about 140 to 180–200 at the later age. His impression was that during the period of most rapid growth the constricted part of the aorta failed to grow in the same way as the rest of the arterial trunk.

SOCIAL MEDICINE IN THE CURRICULUM

In the Section of Social Medicine, under the chairmanship of Sir Wilson Jameson, three discussions took place—one of them, opened by Sir Ernest Rock Carling, on the care of the aged and infirm, a second on social surveys, and a third on social medicine in the curriculum. Dr. John B. Grant, in introducing this last subject, described developments which were taking place in the U.S.A., particularly the organization by the medical schools themselves of comprehensive health care for groups in the community. The two medical schools in Baltimore were organizing health centres of this kind, providing medical care within their own area and, of course, offering material for teaching purposes. The same thing was taking place in New York and elsewhere. The positive aspects of health would be explored, social therapy be integrated with clinical therapy, and families—not individuals merely—would be afforded a preventive and rehabilitative service.

Prof. John Ryle (Oxford) said that it was a curious reflection that the emphasis in medical teaching should have been so predominantly pathological, with very little attention paid to the subject of health, and, further, that the teaching of pathology should have been concentrated upon the individual and not upon the community. Everyone said that prevention was better than cure, and yet the seven years' curriculum of the medical student had embodied hitherto only a relatively few hours' instruction in public health. Many had become dissatisfied long ago with this imbalance, and their colleagues in the public health field had insisted that it required correction. Ten years ago the General Medical Council made a recommendation on the subject, which had been postponed owing to the war, that throughout the whole period of studies the attention of the student should be directed to the importance of the measures by which health might be assessed and maintained and disease prevented. At last there was an awakening on this subject, and what had come to be called social medicine, with its related disciplines, social pathology and social physiology, might be considered as having the G.M.C. recommendation in view. But up to the present this occupied only a minor part in the teaching programme, and the teaching of medicine was still very largely concentrated upon the state of the sick individual considered in complete detachment from his personal and social environment. For one like himself, bred in the clinical tradition but always interested in the broader natural history of disease, it had been a stimulating experience to play a small part in the development of social medicine at Oxford, with, as essential corollaries, the inauguration of a research department and association with colleagues in the fields of public health and industrial medicine. He gave a description of the Oxford courses. Prof. Axel Strom (Norway) and Prof. J. M. Mackintosh continued the debate.

INFECTIVE HEPATITIS

The Section of General Medicine held a symposium on this subject. Dr. A. M. McFarlan discussed the epidemiology. A study of the epidemiological curve over recent years in different countries revealed a steady rise in incidence, followed by a slow fall, and in the course of years a further rise. There was also a seasonal fluctuation in line with the respiratory rather than the intestinal group of diseases. The incidence was highest during school age; in East Anglia it was highest between the ages of 5 and 10 in the towns and between 10 and 15 in the rural districts. Taking some 900 villages in which cases had been notified over two years, there was only one case in each of about half the villages. Protein deficiency did not seem to have had much to do in England with the occurrence of the disease. Something in the Middle East environment appeared to make people more susceptible to the disease even after they had returned to Britain.

Dr. J. H. Dible described the pathology, which he said had been established on a sound basis as a result of the liver biopsy technique. Restoration of the histological appearance readily took place even where there had been a severe lesion. Dr. F. O. MacCallum mentioned transmission experiments. There was no universally susceptible animal, and therefore use had to be made of human volunteers. A Danish visitor, Dr. M. Jersild, gave an account of a recent severe epidemic in Copenhagen. In the years 1944–6 there were 160 chronic cases (duration over three months), and 98% of the patients were women. Acute hepatitis (less than three months) also increased in Denmark during the war, but in this condition there was no pronounced sex difference. The chronic state was sometimes marked by intense pain at the right costal margin and varying degrees of icterus.

Army Experience

Dr. E. R. Cullinan said that in both world wars infective hepatitis had crept in like a stealthy enemy and made its greatest ravages in the armies massing around the Mediterranean. The clinical description given in the official history of the war of 1914–18 could be repeated almost exactly for the war of 1939–45. A second attack occurring even within a month bore no relation to the first in duration or severity. Treatment in the British Army overseas was empirical—adequate rest, liberal diet, especially proteins, and prolonged convalescence. In the winter of 1942–3 infective hepatitis cost the British Army in the Middle East over half a million man-days. Officers were twice as often attacked as other ranks. The epidemiological puzzle remained unsolved.

An account of infective hepatitis in British West Africa was given by Dr. G. M. Findlay. Among West African soldiers during the years 1941–5, out of 1,397 deaths from medical causes 85 were from infective hepatitis.

Finally, Dr. W. N. Pickles made some observations on infective hepatitis in general practice. He gave an account of an epidemic occurring in Yorkshire in 1929 among a population of 5,700 in which there were 270 sufferers, of whom he himself attended 115. The disease ran a mild course in the great majority of his patients. In this and succeeding epidemics he believed he was justified in attributing the spread to droplet infection. Contact sufficient to reproduce the disease was very casual, and there were no explosive outbursts such as would occur from contamination of food or water, although, of course, he would not deny that the disease could arise in that way.

ELECTRO- AND PHONO-CARDIOGRAPHY

The Section of Cardiology devoted a full day to electrocardiography. Dr. F. N. Wilson (Michigan), in a long and impressive contribution on the clinical value of chest leads, said that British physicians and physiologists had done more than those of any other nation to make electrocardiography a useful clinical method, and Sir Thomas Lewis had done more than any one man to establish the principles and methods of analysis upon which the interpretation of the electrocardiogram depended. He added, however, that, except in rare instances, clinical diagnosis should not be made on the basis of electrocardiographs alone. He sometimes wondered whether electrocardiography as practised in the States was not doing more harm than good. It was essential that the man who interpreted the electrocardiogram should have a clear idea of the clinical history and laboratory findings, and if the electrocardiographic interpretation was not confirmed by these other findings it had better be discarded. He was followed by two British exponents of chest leads—Dr. Curtis Bain and Dr. Terence East.

The use of the phonocardiogram in clinical cardiology occupied another session. The subject was introduced by Dr. William Evans (London Hospital), who said that phonocardiography was born soon after electrocardiography, but, while the latter had gained ground rapidly in clinical medicine, phonocardiography had languished. There were signs of a revival, however, and he predicted that this method was likely to have a place in cardiology not far behind the other. He went on to suggest certain ways in which the phonocardiogram helped in the clinical classification which had to be constructed for triple heart rhythm—a classification very necessary

on account of the confused terminology in the literature. In triple heart rhythm there were three sounds; the additional sound might come after the second or in front of the first or immediately before the second, and he proceeded to discuss the significance of the various indications.

He said that in 74 consecutive cases of mitral stenosis submitted to phonocardiography a mid-diastolic murmur had been heard in every instance. In the patient with emphysema the triple heart rhythm was in his belief the first physical sign of right heart failure. It might disappear for a time under treatment, but it was of bad prognostic significance; the prognosis was quite different for the patient with dual heart rhythm. He mentioned innocent triple heart rhythm, but declared his belief that the third heart sound did not occur physiologically after the age of 40. This test, Dr. Evans added, had come to stay. Seven years' experience had taught him the advantage in clinical diagnosis of finding and placing the added sound, also that the quality and intensity of murmurs mattered far less than their place in relation to the cardiac cycle. Directly they placed a stethoscope on the chest they should ask whether the first heart sound or the second heart sound showed accentuation or splitting, whether more than two heart sounds were heard, and whether a murmur, presystolic or systolic, was connected with the first or second heart sounds, or a murmur with the third heart sound—the mid-diastolic murmur of mitral stenosis.

Prof. C. Lian (Paris) described his telestethophone with which it was possible to record the heart sounds while hearing them reproduced by a loud-speaker. Triple rhythm, he said, was the principal indication for employing phonocardiography in the clinic. In the variety of triple rhythm in which the second sound was single a distinction had to be made between gallop rhythm and reduplication of the first heart sound. The clinical distinction might be difficult, but phonocardiography was decisive because in presystolic gallop rhythm the first constituent of the double sound preceded the summit of the R-wave in the electrocardiogram, whereas in reduplication of the first heart sound both constituents fell after the summit of the R-wave. In healthy subjects no part of the vibrations belonging to the first sound occurred before the summit of the R-wave. He indicated other ways in which phonocardiography assisted in the differentiation of the varieties of triple rhythm. A long argument developed between the French and British schools as to the precise significance of some of the findings.

SYMPOSIUM ON PAIN

In the Section of General Medicine symposium on pain, in which various speakers dealt with cutaneous, deep, visceral, cardiac, and gastric pain, and headache, a philosophical introduction was given by Prof. E. D. Adrian. As a physiologist he confessed that the contribution which physiology had to make to this subject of pain was not as important as it ought to be. There was always a tendency to take pain too much for granted. So far as the surface of the body was concerned, the common factor in pain was that it proceeded from a cause which was likely to bring about injury. It was a danger signal; the function of the pain mechanism was to prevent damage, but it was not always very effective for this purpose. Pain usually continued after the damage was done. To understand an attack of pain it was necessary to keep in mind the different levels of the nervous system at which pain messages could take effect. Automatic brakes came into play when the danger signal operated and prevented the damage from becoming worse. They were low-level reactions, and, as the lower levels of the nervous system were under the control of the higher levels, the danger signals must come into consciousness to some extent. If one trod on sharp stones the pain signals reaching the higher levels of the brain would prevent one from continuing to walk on such a surface; but as often as not some damage had been done before it could be avoided. While the pain in the foot, however, might not prevent the immediate damage, yet in the higher levels of consciousness there would remain a warning against walking on sharp stones.

In general the appearance of pain in a particular situation would label that situation as dangerous and to be avoided. Pain signals, therefore, could only have this value if they appealed to the highest levels of total activity, levels at which consciousness came into play. Only at such levels could the brain abstract the significant features of the situation. Without the higher powers of the mind we should not realize that the discomfort following the eating of unripe plums was due to their unripeness. Thus man was helped to escape the recurrence of damage. He could analyse the situation and plan a complicated course of action to prevent the situation arising in future. He could plan hospitals and anaesthetics and medical care so as to free himself from pain and put the alarm bell out of action, relying on his intelligence to prevent the damage from getting worse. Pain had therefore a far greater survival value for man than it could have for creatures with smaller brains.

Considerations of this kind, of course, could be pressed too far. It did not follow that experience of pain was a necessary ingredient in intelligent behaviour or knowledge of good and evil. The central nervous system of man was so highly organized as to make him uneasy in certain sensory situations—noise, for example—and to tend to make him avoid them, without any actual experience of pain. Prof. Adrian turned to the less speculative ground of detailed study of the nervous mechanism responsible for pain. Ambitious attempts to distinguish sharply between the sensory apparatus of pain on the one hand and that for finely graded discriminatory sensations on the other had had to be given up, and the tendency now was to think of sensory fibres and endings as forming more or less a continuous series in which sharp distinctions could not be enforced. Pain mechanisms employed few if any of the largest nerve fibres, which seemed to be concerned with touch and muscle sense, but there was no one size or variety of fibre devoted to pain.

Lord Moran, who presided, pointed out how often the pain symptom led to mis-diagnosis, deep somatic pain being attributed to a local lesion.

B.C.G. VACCINATION

On the last day of the Conference the Sections of Disorders of the Chest, Paediatrics, and Social Medicine combined for a discussion on B.C.G. (Bacillus Calmette-Guérin) vaccination under the chairmanship of Sir Wilson Jameson. Dr. W. H. Tytler gave reasons why the success obtained with this vaccination in some other countries could not be expected to be repeated in Great Britain, with a relatively low child mortality from all forms of tuberculosis. Moreover, any attempt to introduce a new general measure of vaccination would arouse opposition and would prejudice, for example, diphtheria immunization, for which there was urgent need. The vaccination of children exposed individually to special risks was a different story. Altogether, the subject was worthy of attention, but it must not be regarded as likely to revolutionize the tuberculosis situation in this country. More was to be expected of it in some other parts of the world, as, for example, in Eastern Europe and in Africa.

Three Scandinavian workers—Prof. A. Wallgren (Stockholm), Dr. J. Heimbeck (Oslo), and Dr. J. Holm (Copenhagen)—then described the situation in their respective countries. Prof. Wallgren claimed that experimental research work and clinical experience alike had shown that vaccination conferred an increased resistance to subsequent infection. In addition to specific immunity there was created a non-specific resistance, which in the long run was more valuable. Dr. Heimbeck gave an account of the immunization of hospital nurses, and said that the Norwegian experience had definitely proved the efficacy of B.C.G. vaccination. The morbidity due to tuberculosis had been reduced to one-sixth and the mortality to one-tenth. Of 13,000,000 Scandinavians, more than 1,000,000 had now been voluntarily vaccinated. Dr. Holm said that in Denmark as a result of B.C.G. the morbidity rate had been reduced to one-fourth or one-fifth. He added that in Denmark the vaccinations were carried out by specialists; only a few of the 100,000 vaccinations in 1946 were by general practitioners. The mortality in Denmark was now 32 per 100,000 population; this was for all forms of tuberculosis, and was believed to be the lowest in the world. Dr. Holm said that the Danish authorities would be prepared to send by air supplies of the vaccine to Great Britain if necessary.

Advocatus Diaboli

Dr. G. S. Wilson (Medical Research Council) said that it was almost heresy to question the value of this vaccination, but he was bound to make some criticism of the published experiments. He felt that while B.C.G. might be of value in the early stages of a campaign against tuberculosis it would be subject to the law of diminishing returns, and when applied to a population with a fairly high level of genetic immunity the result was likely to be of much less value. He proceeded to dissect four recent inquiries—one by Rosenthal, Bland, and Leslie in 1945 concerning infants in Chicago, another by Levine and Sackett in 1946 concerning infants in New York, a third by Heimbeck concerning Norwegian nurses, and a fourth by Aronson and Palmer in 1946 concerning North American Indian children and young adults.

The results in some of these surveys looked impressive, but closer examination showed that there were gaps in the statistics. In the first of the surveys the workers had not begun their observations on the infants until between three and seven months after vaccination, by which time a number in both the vaccinated and unvaccinated groups had died. It was not stated whether the controls were observed for the same length of time as the vaccinated, nor was there any exact information whether the control children in the contact group were isolated under the same conditions and for the same length of time as in the vaccinated group. In the second series it was not clear whether there had been any endeavour to ensure that the two groups were identical in every respect except for vaccination, or whether the children were of the same age and sex, belonging to the same economic level, and with parents similarly co-operative. He pointed out certain hiatuses in the other surveys which prevented them from being taken quite at their face value. This did not mean that B.C.G. was useless, only that its value was not yet statistically proved. It was, moreover, a live vaccine, subject to considerable variation. Its administration sometimes caused abscess formation, and it involved separation of infants from tuberculous mothers, with risk of cross-infection. All these objections were small individually, but collectively they were formidable. He asked whether it was wise to vaccinate these infants at birth. Infants were not vaccinated against smallpox at birth, because it was known that the antibody did not reach maturity until later.

In the ensuing discussion Dr. David Nabarro (London) and Dr. W. R. F. Collis (Dublin) suggested that a controlled experiment be tried, the latter saying that it was not his experience in Ireland that any ill effects followed upon administration. Dr. Philip Ellman praised the work done in Scandinavian countries, but thought that enthusiasm ought to be tempered with caution. Certainly other anti-tuberculosis measures ought not to be superseded by B.C.G. prophylaxis. He had been struck in Scandinavia by the different pattern of tuberculosis, in particular the high incidence of erythema nodosum, which was comparatively rare in this country. He hoped the Ministry of Health would facilitate clinical trials with a view to arriving at the best means of active immunization. Prof. Wallgren said that vaccination of the newborn was really at the dictate of convenience; but it was no easy task, and occasionally four times the dose used for adults had to be given. He added that personally he had never seen a vaccinated infant who had tuberculous meningitis.

Among the contributions to the Conference proceedings by visitors from abroad were papers by Prof. W. Löffler (Switzerland) on transient pulmonary infiltrations, Prof. L. M. Pautrier (France) on sarcoidosis, Dr. S. Lomholt (Denmark) on vitamin D in the treatment of cutaneous tuberculosis, Prof. J. A. Barré (France) on pyramidal syndromes in the presenile dementias, Dr. G. Rylander (Sweden) on the results of frontal lobe operations assessed by psychological tests, Dr. F. J. Kallman (U.S.A.) on genetical aspects of schizophrenia, Prof. E. Stromgen (Denmark) on his Bornholm social survey, and Prof. W. S. Dawson (Australia) on depression, this last being part of a discussion in the Section of Psychiatry in which the psychodynamics of depression were considered, its psychoanalytical aspects, and the relationship between depression and obsessive-compulsive symptoms. The meetings, which were held in ten different halls, were invariably crowded and the discussions well sustained.

MR. CHURCHILL AND THE PHYSICIANS

INTERNATIONAL CONFERENCE DINNER AT GUILDHALL

A dinner in connexion with the International Conference of Physicians was held at the Guildhall on Sept. 10. Lord Moran presided, and the distinguished guests included the Lord Mayor and Sheriffs, the Belgian, Chinese, and Egyptian Ambassadors, Mr. Winston Churchill, M.P., Lord Woolton, Viscount Hall, the Presidents of the Royal Society, the Royal Society of Medicine, the Royal College of Obstetricians and Gynaecologists, the General Medical Council, and the British Medical Association, the Master of the Society of Apothecaries, and the Masters of several of the City Companies. Nearly 500 were present.

Mr. Winston Churchill, in proposing the health of "The Medical Profession," spoke as follows:

A third of a century has passed since the last International Congress of Physicians was held in London. I was reading a few days ago the reports of that meeting in 1913, and the speeches which were delivered by my two great friends and political colleagues of those days, Lord Morley and Sir Edward Grey. Reading them again, it was impossible to resist the impression of the sedate, orderly, progressive, and liberal-minded world in which they dwelt or of the splendour of Europe rolling in culture and wealth and also, alas! in pride, on the eve of the great catastrophe which overwhelmed the human race and in the aftermath of which we are still involved. I say to our foreign friends from so many countries now 34 years later how warmly we welcome you back to the banks of the Thames and how proud we are to do our best to entertain you in the City of London amid the ruins we have not yet been able to repair, and in this ancient hall which bears in every aspect the scars of honourable and victorious conflict. What a fearful journey we have all made since the Congress of Physicians in London in 1913, and what a contrast is the shadowed world of to-day to the hopeful though already anxious society of men and nations which then represented our national and international life, and what a change we have in all the doubts and confusions of the present time from the glittering structure of society which in so many lands had been built up across the centuries by so much toil and skill.

I noted in reading those speeches that both John Morley and Edward Grey spoke in 1913 of the advance of science with unquestioning faith in its wholly beneficent mission. Now, however, when mankind, without having improved at all, in fact having lost the sense of many of its most precious values, has got control of the most terrible agencies of destruction, and when many of its ablest brains are working night and day for the annihilation of the human race—or such portions of it as they may be temporarily opposed to at any time—working on these methods of annihilation both by the devastation of explosions and by the organized spreading of disease among men, cattle, and crops, when we look at these manifestations of scientific "progress" it is evident that a certain amount of discrimination must be mingled with our satisfaction at our triumph over nature and our piercing of her secrets.

But to-night all our thoughts are turned to healing and not destruction, and we can unfeignedly and unreservedly rejoice in the progress of medicine and—if I am allowed to mention it here—of its close and faithful companion, surgery. Medical science and surgical art have advanced unceasingly and hand in hand. They have certainly had no lack of subjects for treatment. The medical profession at least cannot complain of unemployment through lack of raw material. The genius of mankind is stirred and spurred by suffering and emergency, and a long succession of noble discoveries in the application of the healing art stand forth with all the greater brilliance against the dark and hideous background of hatred and chaos. The miseries of the population have given opportunities to the medical profession of rendering service to their fellow mortals on an unexampled scale, and at the same time unfolding science in many other spheres offers an ever broadening outlook for the toil and devotion of those who follow the practice of medicine. There is no profession or calling whose members can feel greater or deeper conviction of duty of lasting value to be done. There is no profession in which they can feel a surer confidence in an expanding future than those who have gained a command over pain and disease. This, my lords and gentlemen, must be at once an intense and lively inspiration to those who devote their lives to the study and practice of medicine, and I am very glad to offer those who are gathered here in this most distinguished assembly my respectful congratulations on the path in life that they have chosen.

I have been inclined to feel from time to time that there ought to be a hagiology of medical science. One ought to have saints' days to commemorate the great discoveries which have been made for all mankind and perhaps for all time—whatever time may be left to us. Nature, like many of our modern statesmen, is prodigal of pain, and I should like to find a day when we could talk aloud—a day of

jubilation and praise—of good St. Anaesthesia and of just and pure St. Antiseptic. I would not venture in a company so distinguished as this to pretend to any qualifications to judge who should figure in this list, but if I had a vote I should feel bound to celebrate, among others, St. Penicillin, whom I see represented here, and St. M. and B., both invaluable figures to whom I was introduced during the war in good time by Lord Moran, and without whose benedictions I might be regarding your present troubles, if not otherwise preoccupied, from a more serene sphere.

It seems to me that the medical profession has endless worlds to conquer. An eminent American freethinker was once asked how he would have made the world different if he had been God. He replied, "To begin with, I should have made health infectious instead of disease." I throw that out as a constructive suggestion. We are all out nowadays for constructive suggestions, and here is something for your programme of future activities. At any rate, it would be a great reform in politics if wisdom could be made to spread as easily and rapidly as folly. I asked Lord Moran to tell me what I ought to say in this discourse. He suggested that I might compare the professions of medicine and politics. But I was bound to reject that suggestion, finding it impossible to make such comparison, because medicine requires study and the experience of a lifetime, while everyone in a free country, as part of his birthright, knows all about politics after leaving the infant school and on every occasion when he is released from the asylum.

Go forward, then, gentlemen, members of this great vocation, upon your upward path, and strive for ever greater, sharper, and more powerful weapons against the suffering and weakness which afflict us here below. I wish you all success in your noble endeavours, and it is with the greatest sense of honour that I propose the health of "The Medical Profession" and couple the toast with the name of Lord Moran.

Lord Moran's Reply

In replying to the toast Lord Moran, taking up the reference to a hagiology of medicine, said that the medical profession had found it easier in the past to excommunicate heretics who had deviated from the narrow path than to canonize saints. He paid a high tribute to Mr. Churchill, who, he said, possessed the scientific mind—a mind characterized by two qualities in particular—namely, fertility of ideas and an insatiable curiosity. Of Mr. Churchill's fertility in ideas he cited President Roosevelt, who, in referring to the Churchillian project of making artificial harbours by means of sunken ships, said: "He has about a hundred brilliant ideas a day, and four of them are good." As for curiosity, it was only necessary to call in medical evidence, for Mr. Churchill as a patient was extraordinarily inquisitive when, during his wartime illness, he was given penicillin. The sensitiveness or otherwise of the "bug" and the prospect of its "unconditional surrender" interested him vastly. Indeed, Mr. Churchill himself had said that science was only organized curiosity.

Lord Moran went on to say that he thought there was an increased respect for science among the public, though he doubted whether the educated public when in difficulties turned instinctively to the scientist for succour, or whether the Government or industry had as yet made full use of the help which the scientist could give. When the Cabinet was in need of legal advice it turned to the Law Officers of the Crown; when in doubt about the defence of the realm, to the Chiefs of Staff; when in financial difficulties, to the directors of the Bank of England; but when Ministers were at a loss in some matter affecting the health of the people they had not yet elaborated a suitable machinery for bringing to their help the best brains in the profession. In saying that he did not think a committee of thirty or forty doctors, such as the Negotiating Committee, fulfilled the point he had in mind. He also compared the public acclamation which had always greeted triumphs in arms with the comparative indifference to the achievements of the healing art; yet it had been said that Lister had saved more lives than had been lost in all the battles since there were records of war. Lister was one of the only two medical men who had been made freemen of the City of London, the other being Edward Jenner, and apart from these there had been only two other scientists similarly honoured—Sir George Airy, a former Astronomer Royal, and Sir Henry Bessemer, the engineer—a small recognition as compared with the honours properly accorded to the profession of arms.

"In looking, as a doctor, for a prescription for the social malaise of our time," said Lord Moran in conclusion, "I find that Pascal, writing in 1655, said that most of the evils of life arise from a man's being unable to sit still in a room. Thought is still the prerequisite to sound action. Ages of quiet, sedentary, thinking men have done what has been worth doing in the world. It is a matter for regret that, owing to the increasing tyranny of routine, leisure has gone out of the lives of men in the learned professions, so that they are in danger of losing their culture."

INTERNATIONAL SOCIETY OF SURGERY

TWELFTH CONGRESS IN LONDON

The twelfth congress of the International Society of Surgery was opened in London on Sept. 14 under the presidency of Dr. Leopold Mayer, of Brussels. There was an attendance of about 400 members of the Society, including seventy official delegates from the national committees in more than forty countries. The only previous occasion on which the congress was held in London was in 1923, when Sir William Macewen, at that time president of the British Medical Association, presided.

Inaugural Ceremony

The inaugural ceremony was held in the Great Hall of Lincoln's Inn, adjacent to the Royal College. Sir Alfred Webb-Johnson, Bt., P.R.C.S., after reading a telegram from Balmoral Castle expressing to all assembled the best wishes of the King, the patron of the congress, for the success of the meeting, extended a warm welcome to the delegates. The importance of such a congress in the advancement of surgery, he said, was obvious, but such meetings had a further value. By virtue of their calling surgeons were patriots of humanity and, as such, knew no frontiers; and by virtue of their citizenship they were also ambassadors from their several countries and, as such, could help to promote peace, concord, and understanding between nations. Ordinarily such a meeting would have been held at the College, and, thanks largely to the sympathy, encouragement, and generous help of surgeons from all parts of the world, this would be so again. But as some of their amenities had been destroyed they were specially grateful to the Honourable Society of Lincoln's Inn for placing its beautiful hall at their disposal. It was a worthy stage for that important assembly.

Prof. Dos Santos (Lisbon) briefly responded for the delegates, and further short speeches were made by Prof. Jean Verhoogen, president of the International Committee, and Prof. Grey Turner, chairman of the British Committee.

Dr. Mayer, the president of the congress, before declaring it open, delivered an address partly in French and partly in English. He recalled some of the great names which had brought renown to the International Society—Theodore Kocher, of Berne, whose name would always be associated with the treatment of goitre; Czerny, of Heidelberg, whose researches on cancer would make his name for ever famous; Lucas-Championnière, of Paris, immortalized for his publications on orthopaedic surgery; his own master, Antoine Depage, of Brussels, whose organizing powers and military foresight were equalled only by his surgical skill; William Keen, of Philadelphia, whose treatises on surgical technique were still referred to; Macewen, of Glasgow; Giordano, of Venice; Hartmann, of Paris; Matas, of New Orleans; and a number of others. "To-day we rejoice that we can still count among our members several of these famous predecessors, and we remember the mastery of those who left us too soon." It was right and fitting that the country so valiantly led by Mr. Churchill should now witness the first post-war international congress of surgery, just as the French Republic, saved by the fierce energy of Georges Clemenceau, had kindly received them in 1920.

The president then proceeded to a brief review of the advances in surgery in recent years, referring particularly to the developments in vascular surgery (René Leriche, of Paris) and cerebral surgery (Cairns), and also to the work on organotherapy, on chemotherapy, on vitamins, the improvements in anaesthesia and the new technique of rehabilitation after industrial accidents. Finally, he contrasted the results of the treatment of casualties in the two wars.

Penicillin in Surgical Practice

The first scientific session was held on Monday afternoon in the Great Hall of the British Medical Association. Sir Alexande

Fleming introduced a discussion on the role of penicillin in surgery. His remarks were almost a repetition of those which he had made to the International Conference of Physicians the previous week (*British Medical Journal*, Sept. 13, p. 430). Many attempts had been made, he said, to slow down absorption, the most popular being to dispense the penicillin in an oil–wax mixture. In such conditions the penicillin might be found in the blood 24 hours after administration, whereas with a similar dose when saline only was used it would disappear for the most part in 12 hours and wholly in 18. Another method was to delay excretion by the kidney, and although nothing final could be said on this technique it promised well. As to the interval between doses, doses of 15,000 units had been given every three hours, but such doses did not last in most cases for such an interval, so that there was a period of half an hour or longer when there was virtually no penicillin in the blood. He showed, however, that while the penicillin in the blood fell to a very low level it remained at a considerably higher level in the tissues. He also mentioned that pure penicillin applied sub-conjunctivally in eye conditions remained at a fairly high level in the cornea and aqueous. It was not easy to make micro-organisms resistant to penicillin, but with indiscriminate use by unskilled people it could be done.

Thirty speakers had put down their names for the subsequent discussion, but only a few of them were reached. Sir Hugh Cairns said that in June, 1943, Sir Howard Florey and he took 30 million units of penicillin to North Africa, where four British hospitals and one New Zealand hospital took part in trials during which it was conclusively shown that soft-tissue wounds could be completely closed with perfect safety and that probably compound fractures could be closed. Penicillin on injection should be active and sterile. One still found surgeons treating wounds by applying hydrogen peroxide and flavine with inactivated penicillin. There had also been cases where penicillin contaminated with *Ps. pyocyanea* had been injected into the subarachnoid space, with a fatal result. The synergic action of the sulphonamides and penicillin should not be neglected; it had proved useful in treating cases of relapsing meningitis. A remarkable testimony to the non-toxicity of penicillin was afforded by one patient who had received 40 million units. Nevertheless, given intrathecally, it could be toxic, and it was clear to him that in England there were doctors who had used penicillin in a most indiscriminate way. It was not their fault but the fault of their teachers. Pharmacology and therapeutics were not taught precisely enough to students to enable them to deal with these higher chemotherapeutic agents which now came into their hands.

Experience of the Mayo Clinic

Dr. Waltman Walters, of the Mayo Clinic, Rochester, U.S.A., said that the initial work on penicillin in the United States was carried out in the spring of 1941, at about the same time as the first clinical report from Oxford on the use of penicillin suitable for injection. Early results in surgical cases at the Mayo Clinic emphasized the role that penicillin could play in bacteraemia. At one time, before the advent of modern chemotherapy, if bacteraemia was encountered in a surgical patient over 40 years of age, he had only a 10% chance of recovery. The coming of the sulphonamides increased the chance to 60%, and now with penicillin in addition it was 80 or 90%. The preoperative and post-operative use of nebulized penicillin in the management of surgical bronchiectasis had resulted in diminished risk and much less difficulty in handling the patient's secretions. It was the opinion of his colleagues that for such cases nebulized penicillin was far superior to the sulphonamides administered orally. In general surgery it had been customary to use penicillin in doses of 25,000 units injected every three hours. That method was preferred to the use of penicillin in oil. In his own service, when there was intra-abdominal contamination as a result of infection, penicillin was used hopefully as a preventive. Penicillin in these fields had done more than anything else in recent years to contribute to better surgery.

Dr. M. G. Neff (Switzerland) demonstrated the value of local applications of penicillin in operations on the hand; Dr. P. Novak (Czechoslovakia) spoke of the value of penicillin used quite economically in countries where supplies were short, and other speakers were Dr. A. Borjas (Venezuela), Dr. A. Bertocchi (Italy), and Dr. J. Chavannaz (France). On the programme a Russian lady, Mme. Bourdenko, of Moscow, was announced to speak on the work of Prof. Bourdenko on antibiotics, but she did not answer to her name.

The first day concluded with a demonstration by Prof. Dos Santos (Portugal) of some extraordinarily graphic arteriography and venography. Two exhibitions were held in connexion with the congress, one of surgical instruments at University College.

Members, accompanied by their ladies, attended a reception by the President of the Society, Dr. Mayer, at the Savoy Hotel, on Monday, Sept. 15, and enjoyed a pleasant social evening.

HISTORICAL EXHIBITION

The exhibition illustrative of the history of surgery, arranged by the director of the Wellcome Historical Medical Museum, was opened on Sept. 15 at the Science Museum, South Kensington, by Sir Alfred Webb-Johnson, President of the Royal College of Surgeons of England. The chair was taken by Sir Henry Dale, the Chairman of the Wellcome Trustees.

The exhibition is arranged to illustrate the whole of the general history of surgery up to the early post-Listerian epoch, and also the many specialties before and after that date. In the section of pre-history and primitive medicine there are a number of important skulls showing the results of trephining. The surgery of the Assyrians, the Egyptians, the Chinese, and the Hindus is briefly touched on. In the section on classical medicine there are some important collections of instruments, together with the first printed editions of the writings of the classical authors. The section on the Middle Ages includes some beautiful manuscripts of the Articella, of Lanfranc, of Theodoric, of William of Saliceto, and of Henri de Mondeville. The 16th century collection contains a copy of the works of John Vigo which belonged to William Clowes. The surgeons of later centuries are dealt with comprehensively, and a number of collections of instruments are shown. The 19th century exhibits deal with the history of anaesthesia, and with the experiments of Pasteur and Lister in relation to surgery. Autograph letters of Lister are shown, together with the manuscript of an essay on osteology written when he was a schoolboy.

Special sections are devoted to cranial surgery, neurosurgery, the surgery of the ear, nose, and throat, ophthalmology, plastic surgery, abdominal surgery, lithotomy, orthopaedics, the control of haemorrhage, and the history of blood transfusion.

The exhibition will be open to the medical profession and the general public from Monday, Sept. 22, until mid-January. The hours of opening are 10.30 a.m. to 6 p.m. on weekdays and 2.30 to 6 p.m. on Sundays.

The *Report on the Salaries and Conditions of Work of Social Workers*, published by the National Council of Social Service, Inc., 26, Bedford Square, London, W.C.1 (2s. 6d.), suggests that many organizations offer their employees conditions of employment which are now outdated. Only devotion to the work itself holds the "great majority of social workers" in posts offering "from £200–£400 a year." Even so, despite a sense of vocation, large numbers of experienced social workers—and this applies particularly to men—are forced by financial necessity to move to different spheres of work. The strength of social service has been and is being constantly weakened by the loss, in this way, of first-rate people. The joint committee of the British Federation of Social Workers and the National Council of Social Service, which, under the chairmanship of Prof. T. S. Simey, has prepared this report, recommends that agencies unable to pay adequate salaries to their staffs should put themselves in a position to do so by limiting the work they undertake to the money available. Whether they are organized on a statutory or voluntary basis, the efficiency of the rapidly extending social services of this country will depend on the supply of good personnel, and the Report suggests that this cannot be achieved without substantial changes in conditions. The Report covers a wide range: there are sections which define social work and describe the considerable influence which tradition still continues to wield. It touches on the relationship between public authorities and voluntary agencies, discusses specialized training, and refers to a recent advance for the betterment of social workers in the establishment of the Social Workers' Pension Fund.

Correspondence

Poliomyelitis

SIR,—Dr. C. Conyers Morrell does well to draw attention (Sept. 6, p. 397) to the "circumstantial" evidence that is provided by vital statistics regarding the significant factors in the spread of acute anterior poliomyelitis. But the other side of the picture, the evidence of bacteriologists who have traced the virus in the body and its discharges, is just as much in urgent need of recognition by the medical public. No less an authority than A. B. Sabin, in America, recommends (and is so reported in your leading article of Aug. 9, p. 215) that our tactics should be based on the assumption that the disease is spread by faecal contamination. He believes that such tactics are unlikely to check an epidemic, but that they may prevent the infection of a few persons who might otherwise be paralysed. Presumably his hopes are limited because we have so very far to go (and this is particularly the case in this country) in translating into public conduct our now considerable knowledge of these matters. But surely a few people saved from paralysis is enough to go on with.

The bacteriological evidence suggests very strongly that, at any particular time in an epidemic period, faeces are by far the largest source of virus available for distribution, particularly in the case of groups of persons round cases; and, of course, such groups are all the time being distributed more widely by travel. The virus remains in the nasopharynx of cases (both abortive and paralytic) for a few days on the average; it remains in the faeces, however, for a period of weeks on the average, and this is so for contacts as well as cases. All the evidence on the matter is well summarized by Rhodes, A. J. (*Bulletin of Hygiene*, 1947, **22**, 353).

Since the virus is normally found in the nasopharynx, and not usually in nasal secretions or saliva, it cannot be held that droplet infection is relatively much more potent than faecal. It is not necessary to expect that a day of nasopharyngeal infection will do as much harm in the way of distributing virus as a week of faecal. It is more reasonable to make *time* the significant factor. Consider, indeed, the spread of Group A haemolytic streptococci, where a significant factor is the presence of a carrier state that is *nasal*.

No doubt we should think of a paralytic case as the last link in a chain of events. As one possible link there is the factor so well discussed by F. M. R. Walshe: a sort of "Open Sesame" in the form of a non-specific enteritis which happens to occur when the virus is present in the bowel (*Journal of the Society of Arts*, 1945, **93**, 525). What all the links are between the presence of the virus in the community and the full-blown case we have yet to discover; but some are "personal," some "environmental," and some links may be subtle ones, and there may be different combinations of the factors. It is not suggested that the virus invades by the bowel in all cases, but only that this way is important. In inter-epidemic periods the chain is being begun, or completed, rarely. One of the links in epidemic times is probably climatic conditions of a certain type, or sequence of such conditions of a certain pattern. As crude example of parasitisms of a "chain" type we have *Bothriocephalus latus* and plague.

More action is needed in this country in "getting across" our knowledge of intestinal sources of infection, especially as applied to food handlers; and in the matter of the present epidemic this is doubly urgent. The Central Council for Health Education is to hold a conference on the subject in October. But by then, of course, the prevalence will be passing; unless, indeed, this epidemic behaves queerly (like the expected outbreaks of disease in air-raid shelters) and the usual continuation in late September and early October is lacking. This may be hoped for, but is not to be expected, for it is more reasonable to fear that the epidemic curve will follow its normal morphology. Let us follow the prescription of Sabin. The evidence is strong enough to justify us; and you have done well to give his views prominent mention in the *Journal*.—I am, etc.,

Reading. E. C. H. HUDDY.

SIR,—Prof. H. J. Seddon (Aug. 30, p. 319) is to be congratulated on his able summary of the orthopaedic and mechanical aspects of the treatment of poliomyelitis—that is, the treatment of paralysed muscles. He states: "On the whole, therefore, it seems best to admit cases of poliomyelitis to a fever hospital in the first place, on the clear understanding that someone skilled in the treatment of the disease—which generally means an orthopaedic surgeon—is asked to see the patient within twenty-four hours of admission and is given a free hand to order such treatment as he deems necessary."

One is tempted to ask what part Prof. Seddon would allow the physician and the neurologist to play in the diagnosis and handling of cases. The neurologist and physician, trained in the examination of the nervous system and experienced in systemic disease, are surely as well qualified as the orthopaedic surgeon to diagnose and to plan the early treatment of this disease. Customarily it has been their practice to call in orthopaedic advice when they consider it necessary—that is, at a time when the necessity of special appliances for avoiding stretching of muscles has appeared. I would suggest that, as about two-thirds of the cases never develop paralysis and as the early differential diagnosis may be difficult, involving a consideration of other systemic disorders, the clinical care of cases should fall mainly within the province of the physician and the neurologist, at any rate until definite weakness of muscles appears.

Clinical experience has shown that in no other illness is the psychological aspect of treatment more important than in poliomyelitis. It is in this field that the physiotherapist, in constant touch with the patient, is perhaps best able to give encouragement and to restore activity to weakened muscles. But a great deal may still be done in this field by the practitioner who has had the case under his care from the onset, quite apart from measures to prevent stretching of muscles outlined by Prof. Seddon and discussed in your leading article on page 338.—I am, etc.,

Windsor. PHILIP H. WILLCOX.

The Extent of Neurosis

SIR,—Few general practitioners will quarrel with Dr. L. F. Donnan's figures (Sept. 6, p. 396) in the survey he details in his letter. Sixteen years of industrial practice in Liverpool left me with the impression that the figures for neurosis among all cases seen were if anything higher, and I innocently accepted the aetiological factor usually blamed—viz., the speed and high pressure of modern city life. *Experientia docet.*

Fifteen months ago I left Liverpool and took up practice in this area, one of the most thoroughly rural districts in England, where our nearest factory is 12 miles away and all workers are engaged in agricultural occupations. Here, I thought, among the sons and daughters of the soil will be found a minimum of "nerves" and a maximum of pure unadulterated physical illness. But a very short trial caused me to remark to my partner that I believed there was more neurosis in my country patients than in my former city patients, and the longer I practise here the more I am convinced that this is the truth.

At present this is no more than an unconfirmed impression, but, with Dr. Donnan as a guide, I shall attempt to obtain figures on the same basis of assessment. If they prove to be as I expect, what are we to blame for the result? Is neurosis truly a modern disease, or can our older brethren in general practice tell us that there was just the same or greater prevalence in their day? The same effect can hardly be produced by the high-speed struggle of the industrial city and by the much slower tempo of the agricultural speed. Surely we must look elsewhere for the answer to an important and widespread problem.—I am, etc.,

Mildenhall, Suffolk. H. G. ST. M. REES.

SIR,—Certain phrases and statements in Dr. L. F. Donnan's letter (Sept. 6, p. 396) indicate a standpoint which one had hoped was becoming out of date—"rationally physical disorder," "more emotionally ill than actually so." The patient whose condition Dr. Donnan assessed at 100% "emotional

anxiety" received a bromide mixture, but the man with tonsillitis was more fortunate; he was given "appropriate treatment," apparently because he was accommodating enough to have "a normal ailment," whatever that means. So long as "adequately physical disorder" continues to be regarded as more "actual" and more in need of "appropriate treatment" than psychoneurotic illness, "the extent of neurosis" will remain considerably greater than it need be.—I am, etc.,

Glasgow. D. YELLOWLEES.

Neurosis in Industry

SIR,—Dr. Russel Fraser's report, *The Incidence of Neurosis among Factory Workers*, is of considerable interest, and the number of workers investigated—3,000—ensures reasonable sampling of the population involved. I recall that in 1938 I completed a smaller survey of an out-patient medical dispensary in Glasgow where most patients were industrial workers. Over 300 people were examined and treated at that time, and it was found that 11% of them (men and women mixed) were suffering from what I regarded as primary psychogenic neurosis. This approximates very nearly to Dr. Russel Fraser's figures of 10% men and 13% women found in 1947 in factory workers.

It is of interest to note that the war stresses made little difference between the figures I gave in 1938 and those given now in 1947. This helps us in our evaluation of the factors causing the neuroses, and some of us have seen many swings of opinion between heredity, predisposition, and environment as causal factors. The conclusion which arises from comparison of the figures quoted suggests that environment or working conditions have only a minor role in such causation.—I am, etc.,

North Shields, Northumberland. CHARLES SHEARER.

Divorce after Temporary Insanity

SIR,—Your medico-legal correspondent in the issue of July 26 (p. 154) gives a most interesting description of the anomalies in Herbert's (Divorce) Act revealed by the recent case of *Whitley* v. *Whitley*. However, the following statement of your correspondent appears to contradict some of his other comments: "If a patient starts his treatment as a temporary patient under the Mental Treatment Act and then changes to voluntary status he does not come within the Act, and the partner cannot have a divorce for insanity." Such a change of status in fact does not prohibit the granting of a decree, provided that the strict letter of the law is observed in regard to the original detention of the patient on temporary status, and which apparently was not so in the case of *Whitley* v. *Whitley*, in that the visiting committee failed to sign an order for the patient's detention within one month of the patient's admission to hospital.

Your medico-legal correspondent's plea for a revision of Herbert's Act so as to bring its provisions more into line with common sense is emphasized by the features of the case *Williams* v. *Williams* (1946), in that the Williams case illustrates the varying degree of importance which the Act attaches to the detention factor in different stages of a patient's treatment. In the Williams case the respondent had been continuously detained in a mental hospital under a reception order for five years prior to the presentation of the petition for divorce, but subsequently the respondent was discharged from hospital under Section 79 (1890), and at the time of the hearing of the case was not under any institutional care. The medical evidence was that at the time of being discharged from hospital the respondent was a person incurably of unsound mind, and a decree nisi was granted, notwithstanding the fact that the respondent then, from the legal aspect, enjoyed full civic liberty.

Admittedly the Williams case differs from the Whitley case described by your medico-legal correspondent in that the respondent had been detained in the strict legal sense, but it is surely a cumbersome law which lays such emphasis on the importance of the initial treatment of the respondent being accompanied by detention, and which apparently regards detention as an irrelevant factor at the very time when the respondent's incurability calls for social readjustment.—I am, etc.,

Shenley, nr. St. Albans, Herts. OTHO FITZGERALD.

The Lazy Eye

SIR,—Dr. William Moodie in his letter on the lazy eye (Aug. 23, p. 310) lays himself open to certain obvious criticisms both of his facts and of his argument. It is difficult to discuss the facts in the brief compass of a letter; but, in general, the proper use of an occluder is for the purpose of overcoming amblyopia or a false projection system of abnormal retinal correspondences. The expression "a lazy eye" is a convenient translation from medical jargon intended to make the position intelligible to laymen, and particularly to the patient's parents. Like all such conventional translations it is an analogy, and the analogy must not be overstrained.

Let us assume the expression means an amblyopic eye, as it usually does. Amblyopia in children, usually associated with squint, is generally due to a process of active suppression of the visual images of the amblyopic eye, with the formation of a central scotoma, and a depression of central vision which may be extreme—e.g., to less than 6/60. Dr. Moodie begs the question by stating the condition "is nearly always optical in origin." It depends upon what is meant by the expression "optical."

Once amblyopia of this kind is established, the only means of cure is by compelling the child to use the amblyopic eye; and this can only satisfactorily be done by completely covering the other eye. In favourable cases recovery of visual acuity to 6/6 may result in a short time. But if treatment is withheld the amblyopia becomes in time permanent and irreversible; it is rare to achieve much success in children aged 10 years; and in adult life the total loss of the useful eye is rarely if ever followed by any noticeable improvement in the amblyopia of the survivor.

Does Dr. Moodie seriously suggest then that these amblyopic children should be allowed to grow up with one useful eye when there is a reasonable chance of having two? Of course occlusion means some interference with school work for a time; the greater the degree of amblyopia, the greater the interference; but this is a small price to pay for the chance of recovery of useful sight in an eye otherwise doomed to lifelong uselessness as regards central vision. The answer is early diagnosis of amblyopia and early efficient treatment (which need not be unduly lengthy), not the abolition of occlusion.

There seems to be some danger of confusion between those cases with normal binocular vision who are naturally left-handed who show nervous disturbances if forced to use the right hand, and cases of squint with amblyopia in whom binocular vision has already broken down. It must be remembered too that psychological disturbances are sometimes a factor in the production of a squint, and so is uncorrected hypermetropia; but, if the squint results in a threat of amblyopia and occlusion is prescribed, it is not rational to blame the psychological disturbances upon the treatment. This is to put the cart before the horse.

Dr. Moodie's claim that the lazy eye "is nearly always optical in origin, often a hypermetropia," is totally misleading and quite unjustifiable, and his suggestion that "the rational treatment is optical" similarly begs the question. The rational treatment is occlusion; whether this is an "optical" treatment or not it is difficult to say. If Dr. Moodie means to imply that all cases of amblyopia in hypermetropic eyes—or even a majority of them—could be cured simply by the provision of suitable correcting lenses, then the answer is that experience shows complete failure can be expected in about 75% of cases unless occlusion is also employed.—I am, etc.,

Lincoln. ALLAN H. BRIGGS.

Contact Lenses

SIR,—It seems possible that the article on contact lenses by Dr. C. G. Kay Sharp (Aug. 16, p. 261) may give a too optimistic impression to the profession about the indications for fitting these lenses. How many of the patients wear the lens for which they have paid a tidy sum of money will never be known, for when we have made a mistake over a purchase we do not always admit it lest we should be criticized for extravagance.

While all are agreed that these lenses serve a useful purpose in many cases, it would be a mistake to think that any ametrope may wear them. A lens worn inside the eyelids constitutes a foreign body. With perfect grinding the irritation from this

foreign body may be reduced to a minimum, but some irritation remains. Whether the patient will tolerate this small annoyance depends upon his temperament, and upon the degree and kind of incentive which led to their adoption. If he can obtain vision through contact lenses which he cannot do by any other means, there is a good chance of his wearing them; but if they are desired in order to improve one's personal appearance by giving up spectacles, then only a small proportion of those who obtain the lenses for this reason will wear them. The rest, when the first enthusiasm has died down, will abandon them, consoling themselves for the financial outlay by a mental promise to wear them on a "special occasion"—which usually does not arise.—I am, etc.,

London, W.1. SEYMOUR PHILPS.

Manifestations of Malnutrition

SIR,—Regarding epileptiform fits and anorexia occurring in conditions of thiamine deficiency, I feel it important to bring to notice findings which do not accord with those expressed by Dr. R. G. S. Whitfield in his informative article (Aug. 2, p. 164) and Lieut.-Col. Lenox MacFarlane in his letter (Aug. 23, p. 311).

Records were kept of 6,998 Australian and British prisoners of war (designated "F" Force by the Japanese) during 12 months April, 1943, to April, 1944. These men were force-marched through some 300 kilometres of hilly jungle and monsoon weather and through cholera-infected localities, and immediately put on heavy labour, to complete the section of the Burma–Thailand Railway in the Three Pagodas Pass area at the Burma–Siam border. Conditions were appalling, the diet ill-balanced and, on an average, below normal metabolic requirements. 3,087 men died during the year. Beriberi overshadowed most other diseases responsible for the mortality, and was predominantly oedematous in type. It was the main clinical feature in 413 deaths. On return of the survivors to better conditions at Kanchanabrui, the experience of the various Australian and British medical officers engaged was correlated.

We found that (1) anorexia was almost invariable—so much so that nursing personnel were specially detailed to spoon-feed the large numbers unwilling to eat what little there was for their support; (2) epileptiform fits were relatively common among the ill men and often of grave prognostic significance. They were often heralded by nocturnal faecal and urinary incontinence occurring in hitherto stable, well-inhibited subjects. It was a danger signal of sudden death.—I am, etc.,

JOHN HUSTON,
Sometime S.M.O., "F" Force.

Edinburgh.

Hypoglycaemia following Partial Gastrectomy

SIR,—May I make a few remarks on the above article in your current number of Aug. 30 (p. 330), in which Drs. Gilbert and Dunlop demonstrate and draw attention to the hypoglycaemic state that sometimes follows this surgical procedure. Many years ago I noticed the appearance of glycosuria after gastro-enterostomy and in some cases of duodenal ulcer, demonstrated that this was due to a brief hyperglycaemia from abnormally rapid emptying of the stomach and absorption of sugar, reproduced the condition in students by duodenal intubation of glucose, and called the condition "oxyhyperglycaemia" instead of the Maclean term the "lag-storage" curve—all this published in your *Journal* (1936, **1**, 526). Evensen, O. K. (1942, *Acta med. scand.*, Supplt., 126) confirmed this, quoting 223 references, but omitting any reference to my article—which I thought naughty.

However, although 10 of my cases developed hypoglycaemia (55 to 65 mg. in arterial blood) after the brief hyperglycaemia, only two felt mild hypoglycaemic symptoms. And I would point out that many normals, with a normal blood-sugar curve without oxyhyperglycaemia, show only 50–65 mg. of glucose in venous blood after 1½–2 hours without any symptoms of hypoglycaemia (see Lawrence, R. D. and Keeping, J. A., *Lancet*, 1947, **1**, 901). Therefore, although by far the chief factor in producing hypoglycaemic symptoms is the absolute level of the blood sugar, some other individual and obscure factors probably come into play. Gilbert and Dunlop's article is a valuable contribution to the problem of the quick-emptying stomach causing a swing from hyper- to hypo-glycaemia, especially as they suggest a possible remedy.—I am, etc.,

London, W.1. R. D. LAWRENCE.

Ourselves and the Russians

SIR,—I was much interested to read your leading article headed "Ourselves and the Russians" (Aug. 30, p. 339). This is to remind you that I wrote a letter (Jan. 20, 1945, p. 96) entitled "Aggressive Impulses in Progressive Society" in which, after reading Dr. Williams's book *Soviet Russia Fights Neurosis*, I praised what I understood was the Russian realistic approach to neurosis in their attempts to avoid exploitation by one individual or one section of society of another. I believed then and still believe now that such a condition is invariably to be found in every case of neurosis as one of the precipitating factors. I am of the opinion that unrest (or mass neurosis) in industry and between nations is certain so long as exploitation by the more powerful of the less so continues to be rife. There is unfortunately no doubt that in many ways the employer class exploited the working classes in days gone by. The seeds of the hate then generated still are in evidence in the fact that nowadays there is a strong temptation for the position to become reversed. The workers are unduly suspicious, and in some cases tend to make impossible demands.

It is unfortunate that the Russian *Medical Worker* accuses the *B.M.J.* of taking political sides, whereas in having published my letter, which is surely rather more pro- than anti-Russian, the *B.M.J.* would appear to have contradicted Mr. Radbil's accusations, at any rate in this one instance. On reading my letter the Anglo-Soviet Medical Council wrote to ask if I would care to become a member of their society, which I was very pleased to do.—I am, etc.,

London, W.1. A. CYRIL WILSON.

POINTS FROM LETTERS

Case of Smallpox with Minimal Lesions

Dr. E. MISKIN (Hove, Sussex) writes: I have been interested in the letters in the *Journal* concerning cases of smallpox with minimal lesions, especially the one of Sept. 6 (p. 395) where a case diagnosed as variola turned out to be herpes simplex. I can distinctly remember a case I attended during the severe epidemic in London at the end of 1901 of a woman who only had three spots—two on one arm and one on the other. . . . She had been revaccinated three years previously, was confined four months before the attack of variola, and was feeding the child herself. So mother and the child (who had been vaccinated one month previously) were both taken into the hospital and again the diagnosis was confirmed.

Acute Non-specific Diarrhoea and Dysentery

Dr. G. R. KERSHAW (Leamington Spa) writes: Permit me to reply to my critics, Dr. G. L. Morgan Smith (Aug. 2, p. 189) and others. Their criticisms contain little with which I am not in agreement or indeed which was not acknowledged in my original communication. Both illustrate exactly, however, that unscientific attitude which it was my purpose to decry—namely, that criteria which they rightly require to be applied to one theory of causation should be demanded of others. Although we cannot nowadays insist on all Koch's postulates being satisfied in their entirety, the principles underlying them remain our yardstick, so that to ascribe a disease of which we are so ignorant to infection caused by an unknown organism which has never been demonstrated, isolated, cultured, or transmitted is the epitome of myth and mumpsimus. Whether we believe infection to be the cause or not, we must acknowledge the experiences of others and admit that we don't know.

Poliomyelitis

Dr. DESMOND URWICK (London, S.W.1) writes: In all articles on poliomyelitis I have read stress has been laid on avoiding crowded places like cinemas and on the importance of infection being conveyed through excreta. Yet, despite the above, apparently the schools are to open this month as usual, although notifications still number 600 or more each week. . . . If an epidemic breaks out at a school and it has to close, who is to be responsible for railway fares and other expenses involved by the children returning home, and what compensation and from whom is a child who may be affected and left paralysed to claim? Why should not the opening of schools be postponed three weeks, and a week added to the spring term and a fortnight to next summer term rather than risk an increase in this pitiful epidemic? Or has it been found in other countries where the disease has been more prevalent that the opening of schools makes no statistical difference? If the decision to open schools is based on this latter consideration, has sufficient attention been paid to the question as to whether the schools in these other countries are as crowded as some of our English schools?

Obituary

L. CARNAC RIVETT, M.CHIR., F.R.C.S., F.R.C.O.G.

Mr. W. Gilliatt, President of the Royal College of Obstetricians and Gynaecologists, writes: I first met Louis Rivett at the Middlesex Hospital in 1911, when he became a dresser on the surgical firm in which I was the house-surgeon. It was perhaps not unusual to discover a dresser who finished his ward work in less than an hour, but it was unusual to find that that dresser's work had been very thoroughly and carefully done. This speed and efficiency, omitting all but essentials, was characteristic of him throughout his life. He collected higher degrees with the same ease and rapidity; later he acquired hospital staff appointments just as quickly, and still later through his speed and dexterity in operating he acquired wide renown. He was a representative of the members of the Royal College of Obstetricians and Gynaecologists on the first Council of the College, and though a junior in years he soon gained the reputation of holding strong views of his own. No help that he was asked to give the College found him wanting, and to suggest that he should write a memorandum or act as chairman of a subcommittee was to ensure that the matter would be thoroughly and quickly dealt with.

Rivett had the happy gift of making friends. He loved the good things of life, and his tall, spare frame, friendly smile, and happy chatter were seen to advantage at the meetings of hospital dining clubs (often created by him) and of the Gynaecological Club. He displayed the same enthusiasm in filling up his hours of leisure as he did in surmounting the problems inherent to professional life. The last years of his life were clouded by the death of his wife, followed shortly by that of his only son in the Far East, and, as if this were not enough, within a few months he was stricken with an incurable disease which he treated with a contempt that was amazing. To visit him during his illness was a lesson in courage and fortitude.

Dr. ISAAC GIBSON MODLIN died on July 25 at the age of 82, and the county borough of Sunderland lost one of its most devoted sons and the profession on Wearside its respected senior member. Modlin, who was a native of Sunderland, spent his working life in practice there after a spell afloat as ship surgeon. He died in harness after a remarkably full life of notable public and professional service. He had been an active member of the local council, a far-seeing chairman of its health committee, and mayor of the town in 1928–30. He joined the British Medical Association in 1893 and served with enthusiasm on the executive committee and as divisional secretary, representative, and later chairman. He was president of the North of England Branch in 1931–2, and at the annual meeting at Newcastle-upon-Tyne in 1921 he was vice-president of the section of preventive medicine. For many years he was honorary surgeon at the Monkwearmouth and Southwick Hospital. As long ago as 1906 he began to lecture to ambulance workers and he fostered and encouraged the growth of the St. John Ambulance Brigade and Association for a period of fifty years. He was an examiner in first aid and home nursing and continued this work up to the time of his death. One can safely say that the Sunderland Ambulance Corps owes its prominent position to Dr. Modlin's exertions. From August, 1914, to April, 1919, Modlin was commandant and honorary surgeon to a Voluntary Aid Hospital staffed by V.A.D. nurses. He was also trustee for the properties which, through his efforts, became the local headquarters of the St. John Ambulance corps. For these services he was raised to the knighthood of the Order of St. John of Jerusalem, and he was also admitted to the Order of the British Empire. The recent war found him as keen as ever, though physically less capable, and his aid post at Whitburn, of which he was very proud, worked with smooth efficiency through the war years. He was an enthusiastic supporter of Sunderland's Association Football Club, of which he became a director.

Dr. DONALD CAMPBELL died on Aug. 7 at the age of 60. He had been a general practitioner of outstanding merit in the Western Isles. While still very young he left his native parish of Ness and settled in New Zealand. During his stay there he cherished the ambition of studying medicine, and ten years later returned to Edinburgh, where, after a successful academic career, in which he gained many distinctions, he graduated M.B., Ch.B. in 1921. He then practised for a time in a mining area and later was appointed medical officer of the extensive district of Lochs, Lewis, where his outstanding physique helped him to battle against the uncharted depths of Loch Erisort or manipulate his motor-cycle over hazardous tracks to distant villages. Dr. Campbell was much esteemed by his fellow practitioners. He was of a quiet, gentle, retiring nature, of few words but very much to the point when he did express himself on any subject. Humility was the key note of his personality, and only when meeting him in the circle of his own home did one fully appreciate the greatness of his character. He had been a member of the British Medical Association for 24 years, and chairman of the Outer Isles Division of the B.M.A. He is survived by Mrs. Campbell, his son, and two daughters, to whom the Island community extend their sympathy.—A. M.

Dr. WILLIAM GLASSE WATSON, after a short illness, died on Aug. 10 in Cambridge, where he had been practising ophthalmology since 1939. In that year he left his general practice in London, following an attack of coronary thrombosis, and, after acting as a locumtenent in an ophthalmic practice for four years, stayed on in Cambridge in practice on his own. Born in Ayrshire in 1895, Watson was educated at Kilmarnock Academy, and on the outbreak of war enlisted in the Highland Light Infantry. He was commissioned in December, 1915, and served in France for three years, afterwards becoming an instructor in the Royal Flying Corps. In 1919 he began his medical studies in the University of Glasgow, but because of a threatened tuberculous infection he was advised to transfer to Aberdeen. He graduated M.B., Ch.B. there in 1924, and became assistant medical superintendent at the Ayrshire Sanatorium, New Carmnock. As a result of his work there he published in *Tubercle* a paper on the prognostic significance of the von Pirquet reaction in adults. Watson practised in Blackheath from 1927 until 1939, and also attended at the Westminster Ophthalmic Hospital. In 1938 he obtained the diploma in ophthalmic medicine and surgery. Ill-health forced him to abandon general practice, and the outbreak of war presented him with the opportunity of specialized practice in Cambridge. He was appointed clinical assistant to the ophthalmic department of Addenbrooke's Hospital, a position he held up to the time of his death. He was a craftsman of an extraordinarily high order. Not only was he skilled as an operator, but his manual dexterity, resourcefulness, and inventiveness extended even to violins and trout flies. The latter he tied with a brilliance of technique second to none, and he was skilled in luring the shyest trout to its doom. He produced melodies from his self-fashioned instruments, and he could make a fishing-rod, knit a sock, keep an apiary under proper control, and write a detective novel. His varied interests and intense good humour brought him many friends, who remember him with real affection as a loyal and generous man. As a doctor he was always painstaking, conscientious, and kind. He leaves a widow and three young daughters.—E. G. R.

Dr. JOHN WILLIAM HUNTER died suddenly at Ipswich on Aug. 26 at the age of 47. Dr. Hunter was a student at Edinburgh University and he took the M.B., Ch.B. in 1924, proceeding M.D. in 1929, after taking his D.P.H. at Durham a year previously. Dr. Hunter was in general practice for two years and he was also on the staff of the Hebburn-on-Tyne Accident Infirmary. He entered the public health service in Newcastle-upon-Tyne in 1926 as assistant tuberculosis officer and was later appointed resident medical officer in the City Hospital for Infectious Diseases. In 1929 he went to Norwich as assistant medical officer of health and he was also in charge of the infectious diseases hospital there. He held the same appointment in Blackburn and then at Walsall. He left Walsall for Portsmouth in 1934 and did valuable work there. A year later, however, he was appointed medical officer of health and school and port medical officer at Ipswich. Dr. Hunter had been a member of the British Medical Association for over twenty years and he served on the Insurance Acts Committee during the war. He was responsible for a number of articles in the medical press on scarlet fever antitoxin, diphtheria, and dysenteric infections.

J. F. writes: With the sudden and unexpected passing of John William Hunter preventive medicine has lost one of its most able practitioners. Although the hospital claimed his first attention, his interests were wide and he did not spare himself in the cause of public health in Ipswich. He gave himself to the war effort unstintingly and won the admiration of his council by his organization of the medical side of civil defence. Perhaps

his neglect of himself in his devotion to Ipswich during the war may have had some bearing on his early death. It is said in Ipswich that John Hunter attended every "incident" throughout the war and personally directed the medical services on the spot. All through the war he was the chairman of the local medical war committee. Of those activities outside official duties which interested him, the Society of Medical Officers of Health took precedence. The Eastern Branch, owing to the large area covered, had not been able to secure well-attended meetings, and did not display that life which he wished. He threw himself into the task of revivifying the branch, and at an early stage his colleagues made him the honorary secretary. It is largely due to Hunter's boundless enthusiasm that the Eastern Branch now represents a very active section of the Society. He served the Branch on the parent council of the Society, and was also a member of the council of the Royal Sanitary Institute, being one of their examiners.

It was only necessary to know Hunter to like him. All those under whom he worked were impressed by his loyalty. He had a kindly nature and did much to help those subordinate to him. He endeavoured to find good in everybody and was one of those few men who have no enemies. Dr. Hunter died just as he had acquired rich experience in all sections of public health work, and had been acknowledged by his colleagues as a man of sound judgment. In these days of great changes and upheavals the public health service can ill afford to lose a man of such wide experience as Hunter, who, at the age of 47, was at the height of his capacity for administrative effort and had so much before him. In thinking of that loss, we must not forget the far greater tragedy which has befallen a devoted wife and two fine boys. To Mrs. Hunter and her sons we extend our deep sympathy.

Prof. THEODOR FRÖLICH, who was born in 1870 and who died on Aug. 14, was well known for his work on experimental scurvy. This was carried out in co-operation with Prof. Axel Holst, and they gave the first classic account of these investigations jointly in 1907. Frölich was professor of paediatrics at the University of Oslo till he retired on reaching the age limit in 1940. He was also for many years President of the Norwegian National Association against Tuberculosis, and in 1930 he presided over the congress in Oslo of the International Union against Tuberculosis.

Medico-Legal

LESBIANISM AS CRUELTY

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

The law takes no direct account of sexual perversion in women. Lesbian practices are not criminal acts unless they involve assault, and they do not afford ground for divorce. The House of Lords would not even discuss the amendment moved by Lord Dawson to Herbert's Bill to have them included in the new grounds. Legal authorities have, however, suggested that perversion in a wife might conceivably amount to legal cruelty, and the court has just confirmed this view in *Gardner* v. *Gardner*.[1]

The parties were married in 1938, and even before the marriage the wife had been living with another woman in what the husband alleged to have been an unnatural relationship, though this, together with all the other allegations, was denied by the wife. Letters showed that her attitude to sex was one of repulsion. Several months before the marriage, for instance, she wrote: "Couldn't you read between the lines and realize that I wanted no sexual contact with you? I hate being pawed about—I loathe to have the abhorrent fact that I am a woman accentuated." Also, before the marriage, she made arrangements to live with her former companion instead of her husband. The husband acquiesced in the hope, he said, that under the influence of his affection the association might die with the lapse of time. After the marriage he visited her from time to time and tried without success to persuade her to leave the woman and join him. He said in court that the two women actually discussed the details of their relationship in his presence. Next year the wife returned to him for a short time, but formed further unnatural friendships with women, and remained away from him until 1942, by which time his health had been affected by the worry which her conduct had caused him. After her return in that year the couple had intercourse several times and she became pregnant. During her pregnancy she became infatuated with another woman. She took little interest in the child, but the couple lived together until 1944, when they were bombed out and had to go to the country; even so the wife persisted in sleeping in London part of the week and wearing male clothing all the time—according to the husband, to ridicule his family. He started divorce proceedings and, being distressed at the idea of divorce, she gave up the men's clothes and had intercourse with him once; then she went back to the bombed house and soon afterwards left him for good. She wrote him some letters about a project to have herself changed into a man by hormone treatment and operation.

The judge found that the husband's evidence of her sexual perversion was corroborated by these letters, and that her explanation that the statements were a fantastic form of shock treatment designed to extort money did not destroy the inference to be drawn from them. He believed the husband's statement that he had been so patient because he was desperately fond of his wife and regarded himself as the only person in a position to try to get her back to normality and to keep a contact which made persuasion possible. His lordship found that the husband had proved a course of conduct consisting of wilful and unjustifiable acts on the part of the wife directed towards him which not only did injury to his health but also caused reasonable apprehension of such injury; and he accordingly granted the husband his divorce.

[1] 1947 1 All E.R. 630.

Correction.—The Secretary of the Pharmaceutical Society of Great Britain writes: The attention of the Society has been drawn to your issue of July 19 last on page 114 of which your medico-legal correspondent reports on the decisions delivered in a recent test action taken between this Society and Potter and Clarke, Limited, concerning the interpretation of the Pharmacy and Medicines Act, 1941. At the end of the second paragraph of this report it appears that the learned correspondent has misunderstood the judgment given in the Chancery Court so far as it concerns the use of the word "linctus." Reference to the judgment will show that Mr. Justice Wynn-Parry held that the word "linctus" was in itself a recommendation within the meaning of the Act, a finding which was not disputed by the plaintiffs in the action in the subsequent Appeal.

Universities and Colleges

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Faculty held on Monday, Sept. 1, with Prof. Geoffrey B. Fleming, the President, in the chair, the Right Honourable Colonel Walter Elliot was admitted as an Honorary Fellow. In introducing him the President said that the Faculty's roll of Honorary Fellows was almost entirely made up from those who had distinguished themselves in some branch of medicine, and although Colonel Elliot had done notable scientific work his greatest claim to distinction arose from services to the State in many high Government offices.

At the same meeting the following were admitted Fellows of Faculty *qua* Physician: T. Anderson, M.D., O. T. Brown, M.B., R. W. Carslaw, M.D., R. S. Duff, M.B., R. A. K. Harper, M.B., D. Jamieson, M.B., J. Leckie, M.B., E. McC. McGirr, M.B., D. Macrae, M.B., E. S. Monteiro, M.D., J. M. Smith, M.B., B. M. Steen, L.R.C.P.&S.Ed.

The following were admitted Fellows of Faculty *qua* Surgeon: J. Aitken, M.B., R. Barnes, F.R.C.S., L. Baumann, L.R.C.P.&S.Ed., Y. Bodhe, M.B., D. B. Brown, F.R.C.S., A. H. Bruce, M.R.C.S., D. H. Clark, M.B., T. Graham, M.B., S. Horowitz, L.R.C.P.&S.Ed., V. V. McCusker, M.B., K. H. Shubbar, M.D., W. Sillar, M.B., A. Young, M.B.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Prof. Alfred Blalock, Professor of Surgery, Johns Hopkins University, will deliver a Moynihan Lecture at the College (Lincoln's Inn Fields, W.C.) on Friday, Sept. 26, at 5 p.m. His subject is "Congenital Cardiovascular Defects with Particular Reference to Coarctation of Aorta" (motion picture).

No. 35

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 30.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947					1946 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	32	4	32	2	2	41	5	23	1	1
Deaths		1	1				—	—		
Diphtheria	164	15	37	10	3	262	26	92	31	15
Deaths	—	—	—	1	—	5	—	1	1	—
Dysentery	85	8	12	—	—	74	14	45	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	—	—	—	—	—	—	—	—	—
Deaths		—					—			
Erysipelas			35	5	2			36	10	—
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				107					65	
Deaths	69	7	20	6	2	31	5	8	14	2
Measles*	2,114	110	49	155	3	1,565	125	73	28	4
Deaths	—	—	—	1	—	2	—	—	—	—
Ophthalmia neonatorum	51	5	21	—	—	98	7	8	—	—
Deaths										
Paratyphoid fever	33	4	4 (B)	—	2 (B)	44	2	81 (B)	—	4 (B)
Deaths	—	—	—	—	—	1	—	—	—	—
Pneumonia, influenzal	229	10	3	1	1	279	11	5	1	1
Deaths (from influenza)†	4	—	—	—	—	6	—	—	—	—
Pneumonia, primary			112	14				104	19	
Deaths		19		6	7		18		9	3
Polio-encephalitis, acute	45	3				4	1			
Deaths		1					—			
Poliomyelitis, acute	612	77	172	10	15	21	—	—	4	3
Deaths		—					—			
Puerperal fever		3	16		—		3	15		—
Deaths										
Puerperal pyrexia‡	122	11	12	—	—	131	9	10	1	1
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	436	34	83	18	18	744	62	136	30	22
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	11	3	3	2	1	27	4	3	—	2
Deaths	—	—	1	1	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,618	193	75	59	6	1,976	124	91	38	27
Deaths	9	1	3	—	—	9	—	—	2	3
Deaths (0–1 year)	330	44	70	24	16	318	34	46	28	12
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,678	578	561	159	106	3,712	567	520	172	94
Annual death rate (per 1,000 persons living)			11·7	10·0				11·4	11·0	
Live births	8,377	1331	1001	392	259	8,699	1311	979	386	268
Annual rate per 1,000 persons living			20·2	24·7				19·7	24·7	
Stillbirths	227	25	37			277	40	34		
Rate per 1,000 total births (including stillborn)			36					34		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Poliomyelitis and Polio-encephalitis

The number of cases of poliomyelitis in England and Wales notified during the week ended Sept. 6 was 662 and the number of notifications of polio-encephalitis was 46, as against 612 and 45 in the week ended Aug. 30. In spite of the increase in the country as a whole the London figures continue to decline a little 69 (77). The chief increases were in Bedfordshire 9 (4), Durham 38 (29), Essex 30 (21), Lincolnshire (Lindsey) 17 (5), Surrey 31 (25), Warwickshire 40 (25), and Glamorganshire 17 (7). The chief decreases were in Northumberland 12 (21), and Southampton (Hampshire) 5 (19). It will be remembered that in the relatively high prevalence of 1938 there were two peaks, one late in July and a higher one in mid-October. Between these two peaks prevalence remained high but fluctuated somewhat from week to week. It is well known that in the period of high prevalence notifications of many diseases have been too high because of the inclusion of cases in which the diagnosis is doubtful and is not subsequently confirmed. Certain indications from hospital experience suggest that the notifications of poliomyelitis are now particularly subject to this source of error, in fact reports from two hospitals suggest that as many as half the notified cases do not develop signs supporting the diagnosis of poliomyelitis and a large proportion are found to be suffering from other diseases.

Final figures of deaths are not yet available but provisional figures show that there were 74 deaths from poliomyelitis and polio-encephalitis together in July and 741 notifications (uncorrected). In London since the beginning of April there have been 29 deaths and 660 notifications (uncorrected). It must be emphasized that these figures are provisional and that final conclusions as to fatality rates cannot be drawn from them.

Discussion of Table

In *England and Wales* decreases were recorded in the notifications of measles 1,164, whooping-cough 200, scarlet fever 53, cerebrospinal fever 17, and acute poliomyelitis 14; there were small rises in the incidence of diphtheria 17, dysentery 10, and paratyphoid 10.

For the fourth consecutive week the notifications of measles have declined by over 1,000. The largest falls during the week were those of Yorkshire West Riding 175, Lancashire 157, and Glamorganshire 101. Except in London and the North, where the incidence remained unchanged, a decline was also recorded in the incidence of whooping-cough, and the largest decrease was Kent 50.

The incidence of scarlet fever during the past month has been at a record low level; notifications were only from one-quarter to one-half those in the corresponding weeks of the war years. No large local variation in the trend of scarlet fever was recorded during the week. The chief feature of the returns for diphtheria was an increase of 9 in Birmingham C.B.

The incidence of paratyphoid in Bedfordshire increased; 18 cases were notified during the week, compared with 9 and 8 in the preceding two weeks. The largest returns of dysentery were Surrey 10 and Wiltshire 10.

An outbreak of gastro-enteritis has been reported from Birch Hill Maternity Hospital, Rochdale, with six fatal cases.

In the Clatterbridge Hospital, Wirral, 7 newly born infants have died from pneumonia.

In *Scotland* an increase occurred in the notifications of poliomyelitis 52, and measles 19, while decreases were reported for acute primary pneumonia 23, scarlet fever 18, and diphtheria 4. The rise in the incidence of poliomyelitis occurred in the south-eastern area, where the cases rose from 8 to 22, and in the western area, where the increase was from 86 to 125.

In *Eire* the chief features of the returns were an increase in the notifications of diarrhoea and enteritis 22 and decreases in the incidence of whooping-cough 24 and measles 69.

Quarterly Returns for Scotland

The birth rate for the second quarter was 23.7 per 1,000 and was 4.4 above the average of the June quarters for the five preceding years. The infant mortality was 53 per 1,000 registered live births, being 6 above the rate for the corresponding quarter of 1946 but 3 below the five years' average. The general death rate was 12.5 per 1,000 and was 0.4 below the five years' average. Deaths attributed to the principal infectious diseases numbered 159 and included 71 from whooping-cough, 31 from influenza, 30 from cerebrospinal fever, 13 from diphtheria, and 13 from measles. The death rate from all forms of tuberculosis was 88 per 100,000, that from respiratory tuberculosis being 70.

Both rates were 6 more than the corresponding rates for the second quarter of 1946.

Week Ending September 6

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 540, whooping-cough 1,683, diphtheria 145, measles 1,447, acute pneumonia 215, cerebrospinal fever 36, acute poliomyelitis 662, acute polio-encephalitis 46, dysentery 64, paratyphoid 29, and typhoid 6.

Medical News

Infantile Paralysis Film

The film on infantile paralysis, which lasts about 15 minutes, will be shown by courtesy of the Central Office of Information at the Lecture Hall of the Royal Institute of Public Health and Hygiene, 28, Portland Place, London, W.1, on Sept. 24 at 1, 2, 3, 4, 5, and 6 p.m. Admission is free without ticket.

Royal Medical Foundation of Epsom College

The Conjoint Committee of Epsom College invite applications for a Christie Pension of £89 per annum from medical practitioners in need of help. Candidates must be not less than fifty-five years of age and must have been registered for at least five years. In addition there are available other pensions and grants of varying amounts for medical practitioners, widows, and spinster daughters, as well as scholarships, exhibitions, and grants for children of public school age. Full information and forms of application may be obtained from the Secretary's Office, Epsom College, Surrey.

Fellowships and Research Grants

Leverhulme Research Grants have been awarded to Dr. J. Grant (medical officer of health for the County Borough of Gateshead) for a study of epidemic diphtheria; to Mr. J. S. Gittins, B.Sc., M.A. (Principal, Aycliffe Approved School, Darlington), for a survey of the mental characteristics of delinquent boys; and to Mr. P. Slater, M.A. (principal research officer, The Social Survey), for work on the use of statistical methods in forecasting human behaviour. Application forms and further information regarding fellowships and research grants may be obtained from the secretary, Leverhulme Research Fellowships, 7, Bedford Row, London, W.C.1.

Foot-and-Mouth Disease Research Committee

The Minister of Agriculture and Fisheries has reconstituted the Foot-and-Mouth Disease Research Committee with the following membership: Dr. A. N. Drury, F.R.S. (Chairman); Dr. C. H. Andrewes, F.R.S.; Prof. S. P. Bedson, F.R.S.; Sir Daniel Cabot, M.R.C.V.S.; Mr. T. Dalling, M.A., M.R.C.V.S.; Dr. R. E. Glover, F.R.C.V.S.; Dr. Russell Greig, F.R.S.E. Dr. I. A. Galloway, Director of the Foot-and-Mouth Disease Research Station, and Mr. F. A. Eveleigh, of the Ministry of Agriculture, have been appointed secretaries to the committee. The terms of reference of the committee remain as follows: "To initiate, direct, and conduct investigations into foot-and-mouth disease either in this country or elsewhere, with a view to discovering means of rendering the invasions of the disease less harmful to agriculture."

COMING EVENTS

Middlesex County Medical Society

The annual general meeting of the Middlesex County Medical Society will be held at the Central Middlesex County Hospital, Park Royal, Middlesex, on Friday, Sept. 26, at 4 p.m., when Dr. F. Avery Jones, the Chairman, will deliver an address on "The Full-time Specialist."

Surgeons' Conference of St. John Ambulance Brigade

Arrangements have been made for the annual conference and dinner of surgeons of St. John Ambulance Brigade to take place at Bonnington Hotel, Southampton Row, London, W.C., on Saturday and Sunday, Sept. 27 and 28. Speakers at the conference, which opens at 2 p.m., will include Sir Heneage Ogilvie and Dr. A. Leslie Banks, with Sir Cecil Wakeley as the principal guest at the dinner at 7 p.m.

Rehabilitation

The British Council for Rehabilitation will hold a short course on rehabilitation at Manchester on Oct. 7–9. There will be visits to the Orthopaedic Department of the Manchester Royal Infirmary, the Dock Workers' Rehabilitation Centre at Salford, the East Lancashire Tuberculosis Colony, and elsewhere. The fee of three guineas includes lunch and tea each day and transport from Manchester to the places visited. Vacancies are limited and applications should be sent in not later than Sept. 30. Those interested should write to the Organizing Secretary, The British Council for Rehabilitation, 32, Shaftesbury Avenue, London, W.1.

Metabolism and Endocrines

This year's Graduate Fortnight of the New York Academy of Medicine will be held from Oct. 6 to Oct. 17. There will be discussions, demonstrations, and lectures on disorders of metabolism and of the endocrine glands, including such topics as hypertension, obesity, intermediary metabolism, and old age.

Gastro-enterology

A postgraduate course in gastro-enterology is to be held at the Hospital de la Santa Cruz y San Pablo, Barcelona, from Oct. 6 to Dec. 15. Diseases of the oesophagus, stomach, intestines, liver, and pancreas will be the subject of lectures, practical demonstrations, and discussions. A maximum of 30 students will be admitted, and the course will cost 500 pesetas. For a supplementary fee courses in radio-diagnosis (10 students), laboratory work (12 students), and gastroscopy (5 students) may be attended.

SOCIETIES AND LECTURES

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Monday, Sept. 22, 5 p.m. Moynihan Lecture by Mr. Arthur W. Allen, President-Elect of the American College of Surgeons, Duodenal Ulcer: A Comparative Survey of Two Groups of Patients, One treated by Sub-total Gastric Resection and the Other by Vagus Nerve Interruption. Tuesday, Sept. 23, 5 p.m. Cecil Joll Lecture by Dr. Frank H. Lahey, Director, Lahey Clinic, Boston, U.S.A., Hyperthyroidism. Wednesday, Sept. 24, 5 p.m. Moynihan Lecture by Mr. William E. Gallie, Professor of Surgery in the University of Toronto, Recurring Dislocation of the Shoulder. Thursday, Sept. 25, 5 p.m. Lister Oration by Mr. Evarts Graham, Professor of Surgery in the University of Washington, Some Aspects of Bronchogenic Carcinoma.

POSTGRADUATE DIARY

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—Wednesday, Sept. 24, 8 p.m., Mr. F. Ridley: Contact Lenses.

A series of meetings will be held in the Department of Ophthalmology of the University of Glasgow on Wednesdays, at 8 p.m., from Sept. 24 to Oct. 22, both dates inclusive, and will be open to all medical practitioners and senior students interested in ophthalmology. Details will be published in the diary column week by week.

A clinico-pathological demonstration will be held in the Meyerstein Lecture Theatre of the Westminster Hospital School of Medicine, Horseferry Road, S.W., on Monday, Oct. 6, at 5 p.m., when the subject under discussion will be Anterior Poliomyelitis.

APPOINTMENTS

Dr. W. G. Patterson, County Medical Officer of Health for Surrey, has been appointed to the Newcastle-upon-Tyne Regional Hospital Board.

Dr. Donald Paterson has been appointed Consultant Paediatrician to the Westminster Hospital and Consultant Physician to the Hospital for Sick Children, Great Ormond Street.

HULL ROYAL INFIRMARY.—*Honorary Surgeon*, J. R. Blackburne, M.B., F.R.C.S. *Honorary Assistant Surgeon*, Peter Walton, M.B., F.R.C.S.Ed.

MANCHESTER ROYAL INFIRMARY.—*Honorary Orthopaedic Surgeon in charge of Department of Orthopaedics (appointment extended for further four years)*: Prof. Harry Platt, F.R.C.S. *Joint Honorary Assistant Orthopaedic Surgeons*, John Charnley, F.R.C.S., and D. Ll. Griffiths, F.R.C.S. *Honorary Physician with charge of Department of Haematology*, J. F. Wilkinson, M.D., F.R.C.P. *Honorary Assistant Surgeon*, H. T. Simmons, F.R.C.S.

SUNDERLAND ROYAL INFIRMARY.—*Senior Physician and Director of the Medical Unit*: A. A. McIntosh Nicol, M.D., F.R.C.P. *Assistant Physician*: R. H. Vasey, M.D., M.R.C.P., D.R.C.O.G. *Dermatologist*: Peter Inman, M.D., M.R.C.P.

WARD, A. I., M.B., B.S., D.A., Assistant Anaesthetist, Norfolk and Norwich Hospital and Jenny Lind Hospital for Children.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. *for* 18 *words or less. Extra words* 3s. 6d. *for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.*

BIRTHS

FATTI.—On Aug. 11, 1947, at Hillingdon, wife of L. Fatti, F.R.C.S., a son.

INGLIS.—On Sept. 6, 1947, at York, to Irene, wife of Dr. James McNaught Inglis, a son—Timothy Christopher.

KAMILL.—On Sept. 12, 1947, at Northgate Nursing Home, to Joan (*née* Hirst), wife of Dr. M. Kamill, 1, Orrell Lane, Liverpool, a son.

LANGE.—On Sept. 8, 1947, at Southampton, to Joyce (*née* Giles), wife of Mr. M. J. Lange, F.R.C.S.E., a daughter.

MILNES.—On Sept. 5, 1947, at Ipswich, to Deirdre Milnes, M.R.C.V.S., wife of Dr. J. N. Milnes, a son.

REES.—On Sept. 6, 1947, at Cardiff, to Catherine, wife of Linford Rees, M.D., M.R.C.P., D.P.M., a daughter.

RUSHTON.—On Aug. 27, 1947, to Joyce (*née* Newman), wife of Dr. E. D. K. Rushton, Pilning, Gloucestershire, a daughter.

SHERRY.—On Sept. 3, 1947, to Kathleen M. (*née* Robinson), F.R.C.S., the wife of Dr. Vincent F. Sherry, a son.

MARRIAGE

BALL—RYAN.—On Sept. 10, 1947, at Crieff, Geoffrey L. Ball, London, to Dr. Sheila Ryan, L.R.C.P.&S., Crieff.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Poliomyelitis

Q.—*About 1932 two Australian doctors stated that by giving serum from convalescent patients in the pre-paralytic stage, they had prevented serious paralysis in cases of poliomyelitis. Modern textbooks cast doubt on this statement. What is the accepted view to-day?*

A.—The above-mentioned paper by MacNamara and Morgan appeared in the *Lancet* (1932, **1**, 469). Their series, like those of many others who have reported good results from the serum treatment of poliomyelitis, was inadequately controlled. In all large series where convalescent serum has been given in the pre-paralytic stage, with a corresponding group of untreated controls, there has been no difference between the rates of residual paralysis and mortality in the two groups. More recently, Bahlke and Perkins (*J. Amer. med. Ass.*, 1945, **129**, 1146), have used the gamma globulin fraction of pooled adult plasma in which poliomyelitis antibodies have been found in concentrations at least ten times as great as in whole plasma. Alternate patients admitted in the pre-paralytic stage during the 1944 epidemic in U.S.A. were given a single large intramuscular dose of gamma globulin ranging from the equivalent of 360 to 500 ml. whole plasma for infants under 1 year to 1,800 to 2,500 ml. for patients aged 12 years or more. There was no difference in the course of the disease or in the end results in the 56 treated and 55 untreated cases. See also our leading article of July 26 (p. 135).

Sensitivity to Insulin

Q.—*I have a patient in whom the smallest dose of insulin produces violent allergic reactions at the site of injection. I have tried all kinds of insulin and followed carefully the technique recommended. The use of strong solutions of insulin with the object of diminishing the quantity of o-cresol preservative injected did not lessen the reaction. Is there a remedy?*

A.—The effect of "benadryl" should first of all be tried. (1) A dose of 100 mg. should be given by mouth about half an hour before the insulin is injected. This should reduce the size of the local reaction, and may in a mild case be discontinued in a week or so. (2) If the local reaction is very severe, as in this case, insulin, say 10 units, and 0.5 ml. of a 1 in 1,000 solution of benadryl in the same syringe should be injected. This should prevent all local reaction (Gastineau, C. F., and Leavitt, M. D., *Proc. Mayo Clin.*, 1946, **21**, 316). Care must be taken to inject the solution into the subcutaneous tissues and not into a venule. An intravenous injection may cause a severe general reaction. To prevent this accident the plunger of the syringe should be slightly withdrawn so as to be certain the point of the needle is not in a venule. The dose of benadryl should be gradually reduced after a week, and may in the end be discontinued.

If the condition is very severe and if the benadryl does not relieve it, an attempt should be made to desensitize the patient with the insulin which gives the least reaction. It is better to use a quick-acting insulin, and the three on the market should be diluted 1 in 10, 1 in 100, 1 in 1,000, and 1 in 10,000. About 0.05 ml. of each solution is then injected intradermally, a separate syringe being used for each solution. A weal will be formed on the skin; the solution which gives the least reaction is chosen. The patient is then given six injections a day at two-hourly intervals. The initial dose should be 0.1 ml. This should not cause any local irritation. If it does, the solution should be diluted ten times and another attempt made. If the local reaction is negligible the same amount is given for three doses and then 0.2 ml. for three doses. The next day 0.3 ml. is given for three doses, and then 0.4 ml. and so on. When 1 ml. is tolerated, a stronger solution is then used in the same dosage until the undiluted insulin can be given without ill effects. Sometimes the desensitization is easy, but sometimes local reactions appear with, say, 0.5 ml. The dose must be reduced until the injection is painless, and kept at this level for one or more days before a further increase is made. The same procedure may have to be repeated one or more times in difficult cases before the undiluted insulin can be used to control the diabetic condition. It is possible that benadryl may be of assistance in shortening the time which the desensitization takes. The site of the injections should be the front and sides of the thigh and upper arm and should be varied as much as possible, otherwise the subcutaneous tissues of the arm may be desensitized and not those of the legs. Once the desensitization is accomplished it is permanent.

Hay-fever

Q.—*What are the present views on the treatment of hay-fever? What is the dosage of "benadryl," and can it be safely used over a long period?*

A.—The most satisfactory treatment of hay-fever is still by desensitization with pollen extract. The pre-seasonal method is usually employed, and should be repeated each year for several years, until there has been at least one season, during which the pollen count has been high, completely free from symptoms. The new anti-histamine drugs, "antistin" and "benadryl," give good to moderate relief in the majority of patients. Side-effects are common with benadryl, and in dosage the drowsiness is usually the limiting factor; the best dosage is that which gives the maximum of ease with the minimum of side-effects—usually 50 or 100 mg., rarely 150 mg., as required, up to three-hourly. It can be used safely over a long period.

Psoriasis of Scalp

Q.—*Is there a clean and effective treatment for psoriasis of the scalp?*

A.—The use of liquor picis carbonis in water (1 in 4) or 0.5% dithranol in ung. aquosum *B.P.* or the following pomade, or the alternate use at night of these last two measures, is effective and should be combined with a shampoo once a week:

℞ Acid. salicyl.	.. ..	gr. x (0.65 g.)
Hydrarg. ammon.	.. ..	gr. x (0.65 g.)
Liq. picis carb.	.. ..	ɱxx (1.2 ml.)
Ung. aquosum	.. ..	ad oz. 1 (31 g.)

Ft. ung.

Penicillin in Cardiac Infections

Q.—*A female aged 45 years had occasional precordial pain, palpitations, and slight breathlessness on exertion about two years ago. When I undertook treatment six months ago her blood pressure was 160/100; the pulse was 110, regular, and of moderate volume. It is still regular though it may rise under emotional stress. Urine normal. Electrocardiography indicated signs of myocardial damage. She responded well to rest in bed, bromides, digitalis, and large quantities of vitamin B complex. She sleeps well. There is enlargement of the liver and spleen; bowels regular; temperature normal. There are no signs of calcareous degeneration in the blood vessels. May I have your advice regarding the use of penicillin in this case; also can twice-daily injections of 5 million units be given?*

A.—The description of this case does not suggest an infection of the heart; it points rather to autonomic imbalance associated with mild hypertension. The combination of chest pain, palpitation, and tachycardia related to emotional disturbance in a woman of 45 suggests, further, the possibility of an endocrine factor. The only infections of the cardiovascular system in which penicillin is known to be effective are infective endocarditis and possibly syphilitic aortitis. Whatever be the exact diagnosis in the present case, both of these would seem to be most unlikely. Enlargement of the liver and spleen in countries such as India might well be of malarial origin, and consequently of less significance in a differential diagnosis of infective endocarditis. It is most unlikely that penicillin therapy would be useful in the circumstances described. The dosage mentioned is in any case excessive, the usual quantity in infections of the heart being 500,000 units every twenty-four hours in divided doses.

The Fatherless Child

Q.—*It is universally recognized that adopted children should be told the truth concerning their adoption, but I should be grateful for advice on what an illegitimate child should be told about his father. My maid, whose fiancé deserted her during pregnancy, has a son aged 15 months. The father of the child, who has not seen the mother since the pregnancy was discovered, is still living in the local market town, so a meeting is always possible, though unlikely; this prevents our telling the child his father is dead.*

A.—The difficulty in this case is, to a great extent, that of all mothers who have sole charge of their children, whether the absence of a father be due to death, desertion, or divorce. Fortunately, there is in the mind of the very young child no distinction between absence and death, so that the phrase "Daddy has gone away" covers all contingencies up to the age of at least 3 years. It is usually best to begin to instil this idea gently between 18 months and 2 years, so that it becomes accepted as a matter of course, thus avoiding the sudden shock of realizing the lack of a father in the home. When later there comes the inevitable question: "Is daddy coming back?" this can be answered by, "I don't think he will," and gradually explaining the truth as the child becomes old enough to understand.

Much more important than the actual telling is the manner of doing so. When a mother is the only parent known to her child, she will, if she is wise, accept a dual identity to him, since his relationship to her must be coloured by his conception of the missing father. If the latter is said to be a bad man who deserted his wife the child will also feel rejected, and will probably develop fantasies that this happened because he himself was bad. When guilt feelings so precipitated become intolerable he may well swing to the other extreme, passionately identifying himself with his father as a good figure and rejecting his mother. It may be very hard for this mother to speak of the father only with kindness and without apparent anxiety or self-pity, especially when she has to tell that they parted before her son was born, but if she can bring herself to do this she will avoid many troubles in his upbringing. Her generosity will be repaid by a secure mother-child relationship unlikely to be seriously shaken should the father meet his son in later years.

"Happy Feet"

Q.—*A patient who was a Japanese prisoner of war for 3½ years and had severe dysentery and beriberi still suffers from leg pains and the condition referred to as "happy feet." His cardiovascular system and chest are sound. Is there any specific treatment apart from aneurine for the feet? Crystalline vitamin B_1 is mentioned in the literature—what are the dose and the route, and for how long should I try it?*

A.—It is unlikely that vitamin therapy will improve the patient at this stage. Presumably he has been under treatment for some time. If deficiency of the vitamin B complex is sufficiently prolonged, irreversible changes occur in the nervous system. It is very doubtful if aneurine will have any effect. "Happy feet" has been treated by various B vitamins, including riboflavine, nicotinic acid, and vitamin B_6. The dosages of these are 5 mg., 300 mg., and 100 mg., daily, respectively. If flushing occurs with nicotinic acid, nicotinamide can be used instead. If some improvement does not occur within a week or two, either the condition is not one of deficiency disease or irreversible nerve changes have occurred.

Toxicity of the Chlorbenzenes

Q.—*What are the toxic effects of para-dichlorbenzene, which is used as an insecticide in the form of a paste pressed into tablets? I am interested in any possible toxicity conveyed to workers handling this substance during its manufacture from a grey powder into tablet form.*

A.—As a general rule the introduction of chlorine into an aliphatic compound increases its toxicity, while in the case of an aromatic compound the reverse is true. Thus, the chlorbenzenes are less toxic than benzene. There is evidence, however, to suggest that the substitution of chlorine in the benzene ring increases toxicity with each successive chlorine atom up to two, while further chlorination reduces toxicity. The structural position of the chlorine atom also influences toxicity, but there is conflicting evidence as to whether para- or ortho-dichlorbenzene is the more toxic. The more recent work seems to favour the view that the ortho preparation is more toxic than the para isomer. Some of the chlorinated benzenes are solids and insoluble in water; thus the potentialities of the solvent must be considered also. There is sufficient evidence to justify strict measures to prevent ingestion or inhalation of dust or fume of the chlorbenzenes. Headache, dizziness, and unconsciousness are the result of acute poisoning; the later manifestations of ill effects might be those associated with damage to the liver, and possibly kidneys, while the blood might show leucotoxic effects. Much of this summary of the ill effects of chlorbenzenes is based on animal experiments, and there seems no reason why work with this compound, which has been used extensively in veterinary therapeutics and as an insecticide, should not be undertaken with safety under reasonable conditions. Variations in individual susceptibility are likely.

Gangrene of Toes

Q.—*I have two patients: (a) an old man of 78 with gangrene of two toes from senile arteriosclerosis only; and (b) a man of 46 with previously undiagnosed diabetes who has moist gangrene of three toes of one foot and severe skin changes to the region of the instep. When his diabetes has settled, at what site should amputation be carried out if the dorsalis pedis is not pulsating palpably on that foot?*

A.—In both patients amputation is indicated—more urgently in the diabetic case. In this latter the diabetes must first be stabilized by insulin and a suitable diet. In both cases to wait for natural separation of the gangrenous tissue is to subject the patient to much unnecessary pain and to an unjustifiably long stay in hospital; in the diabetic case delay is definitely dangerous—the risk of infection being so great. If the dorsalis pedis artery is impalpable, the correct site for amputation is the lower third of the thigh (supracondylar femoral)—the most distal point at which the main arterial diameter is appreciably larger than that of the dorsalis pedis.

NOTES AND COMMENTS

Fissured Lip.—Dr. R. E. HADDEN (Portadown, N. Ireland) writes: Following on the "Any Questions?" note on "Fissured Lip" in your issue of July 5 (p. 40), you may think it worth while publishing the following. I have found that a satisfactory cure of fissured lip results from injections of riboflavine, 10 mg., repeated after 3 or 4 days, and continuing if necessary; but in my experience 2 or 3 doses are sufficient. Tinct. benzoin. co. is an excellent local application.

Funds for X-ray Plant.—Dr. E. S. (Hove) calls attention to the special need of a hospital in South India (Chikka Ballapura) under the care of Dr. Cecil Cutting, of the London Missionary Society. An efficient *x*-ray plant is needed, and though the building is waiting, the cost—£1,000—is not to hand. A wide area with a native population is covered, and emergency and accident cases are many. There may be some of our B.M.A. members who would like to help a fellow-member with donations towards the £1,000 needed. If so, would they communicate with Dr. Cecil Cutting through the London Missionary Society, 42, Broadway, London, S.W.? At this crisis of affairs in India the need and opportunity for continuing sympathy and help to the population is great, and the help of medical work is gratefully accepted.

Correction.—In Dr. W. Howlett Kelleher's paper on acute poliomyelitis in the *Journal* of Aug. 23 the figure "37%" in the fifth line of the second paragraph on p. 292 should read "27%."

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